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OCT 10 1916

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Gleanings in Tree Culture



Special Bargains in Shipping-cases

With the bountiful crop of honey being gathered there will be need for shipping-cases in which to place the comb honey for market. During the past few years we have made several changes in the style of our cases, and have some stock of styles formerly made, but not now listed in our catalog. There are some people who prefer the older styles to the later ones, and there may be others who would use the older styles if bought at a low price, and prompt delivery were made. We have on hand the following stock which we offer, to close out and subject to previous sale, at the special prices here named:

- 3 crates of 50 each, 9½-inch, 2-row, at \$4.00 per crate.
 - 19 crates of 50 each, 10-inch, 2-row, at \$4.00 per crate
 - 13 crates or 50 each, 6¼-in. 3-row, at \$4.00 per crate.
 - 56 crates of 50 each, 12-pound cases, at \$4.00 per crate.
- All of the above have either 2 or 3 inch glass, and take 12 sections 4¼x4¼x1½ plain.

- There are also for the same size section, packed 10 in a crate:
- 10 crates of 10 each, 9½-in. 2-row at 85 cts. per crate.
 - 3 crates of 10 each, 6¼-inch, 2-row, at 85 cts. per crate.
 - 4 crates of 10 each, 10-inch, 2-row, at 85 cts. per crate.

- For the 4¼x1½ beeway section we have:
- 4 crates of 50 each, 15¼-inch, 2-row, for 15 sections, at \$4.50 per crate.
 - 6 crates of 10 each, 15¼-inch, 2-row, for 15 sections, at 95 cts. per crate.
 - 10 crates of 50 each, 11¾-inch, 2-row, for 12 sections, at \$4.00 per crate.
 - 6 crates of 10 each, 12-lb. safety cases with cartons at \$1.20 per crate.
 - 3 crates of 10 each, 8-inch, 3-row, for 12 sections, at 85 cts. per crate.
 - 2 crates of 10 each, 12-inch, 4-row, for 24 sections, at \$1.80 per crate.

- For 24 sections, 4¼x1½ plain:
- 2 crates of 10 each, 9½-inch, 4-row, at \$1.75 per crate.
 - 3 crates of 10 each, 10-inch, 4-row, at \$1.75 per crate.

- For 12 sections 4x5x1½:
- 15 crates of 50 each 3-row cases, at \$4.00 per crate.

ADDITIONAL SHIPPING-CASES AT BRANCH OFFICES.

At Washington, D. C.

- 3 cases, 10 each, 12-lb. cases for 4¼x1½ sections, at 85 cts. each.
- 7 cases, 10 each, 12-lb. cases for 4¼x1½ sections, at 85 cts. each.
- 3 crates, 50 each, 12-lb. cases for 3½x5x1½-inch sections at \$4.00 per crate.

At Mechanic Falls, Me.

- 5 packages, 10 each, 12-lb. safety-cases for 4¼x1½ sections, including safety carton, at \$1.20 per crate.
- 2 crates, 10 each, 12-lb. cases for 4¼x1½ sections at 85 cts. per crate.
- 3 crates, 10 each, 12-lb. cases for 3½x5x1½ sections at 85 cts. per crate.
- 1 crate, 10 each, 12-lb. cases for 4x5x1½ sections at 85 cts. per crate.
- 2 crates of 10 each, 12-lb. safety cases for 4x5x1½ sections, including safety cartons \$1.20 per crate.

We also offer the following glass jars, to close out at special prices, subject to previous sale.

At Mechanic Falls, Me.

- 5 gross ½-lb. square jars, with corks, at \$4.00 per gross.
- 29 cases of 2 dozen each, Simplex or Federal 1-lb. jars at \$1.10 per case.

At Philadelphia Branch.

- 1 gross ¼-lb. square jars with cork, at \$3.25.
- 10 cases ½-lb. square jars with cork, 75 cts. case of 2 dozen.
- 1 gross ½-lb. square jars with cork, at \$4.00.
- 8 cases ½-lb. square jars with cork, 90 cts. case of 2 dozen.
- 4 gross 1-lb. square jars with cork, \$5.00.
- 3 cases 1-lb. square jars with cork, \$1.10 case of 2 dozen.
- 5 gross 2-lb. square jars with cork, at \$7.50.
- 37 cases 1-lb. Simplex jars, 2 dozen per case, at \$1.30.

At New York Branch.

- 1 crate 50 2-row and 1 crate of 50 3-row 12-lb. cases for 4¼x1½ sections at \$4.00 per crate.

At Philadelphia Branch.

- 8 crates, 50 each, 12-lb. cases for 4¼x1½ sections at \$4.00 per crate.
- 10 crates of 10 each, same, at 85 cts. each.
- 13 crates, 50 each, 12-lb. cases for 4¼x1½ sections at \$4.00 per crate.
- 9 crates, 10 each, same, at 85 cts. per crate.
- 4 crates, 50 each, 24-lb. cases for 4¼x1½ sections at \$8.00 per crate.
- 4 crates, 10 each, same, at \$1.70 per crate.
- 4 crates, 50 each, 16-lb. cases for 4¼x1½ sections at \$4.50 per crate.
- 7 crates, 50 each, 12-lb. cases for 3½x5x1½ sections, at \$4.00 per crate.
- 2 crates, 10 each, same, at 85 cts. per crate.

At New York Branch.

- 4 bbls. of 7-oz. tumblers, 24 doz. to barrel, at \$5.00 per barrel.
- 11 gross of 2-lb. square jars with cork, 6 dozen to case at \$7.50 per gross, \$4.00 per case.
- 13 cases of 2 dozen each ½-lb. square jars with cork, at 90 cts. per case.

At Washington, D. C.

- 3 bbl. 12 dozen 1-lb. Simplex jars at \$5.25 per bbl.
- 1 bbl. 12 dozen 1-lb. No. 25 jars at \$5.00 per bbl.
- 2 crates 12 dozen 1-lb. Simplex jars at \$5.00 per crate.
- 1 case 2 dozen 1-lb. Simplex jars at \$1.10 per case.

These are fine for exhibition purposes.

- 4 dozen ½-lb. Hershiser jars with nickel tops at 50 cts. a dozen.
- 11 doz. 1-lb. square Hershiser jars with nickel tops at 65 cts. a dozen.

THE A. I. ROOT COMPANY, Medina, Ohio

SHIPPING-CASES FOR COMB HONEY

Don't make the mistake of putting a fine lot of section honey in poor shipping-cases. It will lower the price to you and damage your future sales. "Falcon" cases are A No. 1, and will be a credit to any crop of honey. Prices are as follows:

Shipping-cases in Flat, without Glass.

No. 1....holding 24 sections, $4\frac{1}{4} \times 1\frac{1}{4}$, showing 4.....	10, \$2.00; 100, \$18.00
No. 3....holding 12 sections, $4\frac{1}{4} \times 1\frac{1}{4}$, showing 3.....	10, \$2.00; 100, \$18.00
No. 1½....holding 24 sections, $4\frac{1}{4} \times 1\frac{1}{4}$, showing 4.....	10, \$1.90; 100, \$17.00
No. 6....holding 24 sections, $3\frac{5}{8} \times 5 \times 1\frac{1}{2}$, showing 4.....	10, \$1.80; 100, \$16.00
No. 8....holding 24 sections, $4 \times 5 \times 1\frac{1}{2}$, showing 4.....	10, \$1.80; 100, \$16.00

Shipping-cases with Glass.

	with 3-inch glass	with 2-inch glass
No. 11....Same as No. 1... Nailed, 35c; in flat, 1, 25c; 10, \$2.30; 100, \$21.00.....	100, \$20.90	
No. 13....Same as No. 3... Nailed, 22c; in flat, 1, 15c; 10, \$1.40; 100, \$12.50.....	100, \$12.00	
No. 11½....Same as No. 1½. Nailed, 35c; in flat, 1, 25c; 10, \$2.20; 100, \$20.00.....	100, \$19.00	
No. 16....Same as No. 6... Nailed, 30c; in flat, 1, 22c; 10, \$2.10; 100, \$19.00.....		
No. 18....Same as No. 8... Nailed, 30c; in flat, 1, 22c; 10, \$2.10; 100, \$19.00.....		

Red Catalog, postpaid.

Dealers Everywhere.

"Simplified Beekeeping," postpaid.

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

HONEY GRADING RULES

GRADING RULES OF THE A. I. ROOT CO., MEDINA, OHIO.

In harmony with the Federal net-weight regulations and the statutes of many states, all comb honey we handle is figured with the weight of the section box as well as the case excluded. To get the net weight, deduct the weight of the empty case and 1 lb. 8 oz. for the weight of 24 sections (1 oz. each).

COMB HONEY.

Extra Fancy.—Sections to be evenly filled, combs firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side. No section in this grade to weigh less than 14 oz. net. Cases must average not less than 22 lbs. net.

Fancy.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain; comb and cappings white, and not more than six unsealed cells on either side exclusive of the outside row. No section in this grade to weigh less than 13 oz. net. Cases must average not less than 21 lbs. net.

No. 1.—Sections to be evenly filled, combs free from propolis or other pronounced stain; comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row. No section in this grade to weigh less than 11 oz. Cases must average not less than 20 lbs. net.

No. 2.—Combs not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than

60 unsealed cells exclusive of the row adjacent to the box. No section in this grade to weigh less than 10 oz. net. Cases must average not less than 18 lbs. net.

CULL COMB HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases or that in badly stained or propolized sections; sections containing pollen, honey-dew honey, honey showing signs of granulation, poorly ripened, sour or "weeping" honey; sections with combs projecting beyond the box or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box; leaking, injured, or patched-up sections; sections weighing less than 10 oz. net.

EXTRACTED HONEY.

This must be well ripened, weighing not less than 12 lbs. per gallon. It must be well strained; and, if packed in five-gallon cans, each can shall contain sixty pounds. The top of each five-gallon can shall be stamped and labeled, "Net weight not less than 60 lbs." Bright clean cans that previously contained clean light honey may be used for extracted honey.

EXTRACTED HONEY NOT PERMITTED IN SHIPPING GRADES.

Extracted honey packed in second-hand cans, except as permitted above.

Unripe or fermenting honey, or weighing less than 12 lbs. per gallon.

Honey contaminated by excessive use of smoke.

Honey contaminated by honey-dew.

Honey not properly strained.

GRADING RULES OF THE COLORADO HONEY-PRODUCERS' ASSOCIATION, DENVER, COL.,

FEBRUARY 6, 1915.

COMB HONEY.

FANCY.—Sections to be well filled, combs firmly attached on all sides and evenly capped except the outside row next to the wood. Honey, comb, and cappings white, or slightly off color; combs not projecting beyond the wood; sections to be well cleaned. No section in this grade to weigh less than 11 oz. net or 13½ oz. gross. The top of each section in this grade must be stamped, "Net weight not less than 12½ oz."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NUMBER ONE.—Sections to be well filled, combs firmly attached, not projecting beyond the wood, and entirely capped except the outside row next to the wood. Honey, comb, and cappings from white to light amber in color; sections to be well cleaned. No section in this grade to weigh less than 11 oz. net or 12 oz. gross. The top of each section in this grade must be stamped, "Net weight not less than 11 oz." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NUMBER TWO.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 oz. net or 11 oz. gross; also of such sections as weigh 11 oz. net or 12 oz. gross, or more, and have not more than 50 uncapped cells all together, which must be filled with honey; honey, comb, and cappings from white to amber in color; sections to be well cleaned. The top of each section in this grade must be stamped "Net weight not less than 10 oz." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

Comb honey that is not permitted in shipping grades

Honey packed in second-hand cases.
Honey in badly stained or mildewed sections.
Honey showing signs of granulation.
Leaking, injured, or patched-up sections.
Sections containing honey-dew.
Sections with more than 50 uncapped cells, or a less number of empty cells.
Sections weighing less than the minimum weight.
All such honey should be disposed of in the home market.

EXTRACTED HONEY.

This must be thoroly ripened, weighing not less than 12 pounds per gallon. It must be well strained, and packed in new cans; sixty pounds shall be packed, in each five-gallon can, and the top of each five-gallon can shall be stamped or labeled, "Net weight not less than 60 lbs."

Extracted honey is classed as white, light amber, and amber. The letters "W," "L. A.," "A," should be used in designating color; and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new substantial cases of proper size.

STRAINED HONEY.

This must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained; and, if packed in five-gallon cans, each can shall contain sixty pounds. The top of each five-gallon can shall be stamped and labeled, "Net weight not less than 60 lbs." Bright clean cans that previously contained honey may be used for strained honey.

Honey not permitted in shipping grades.

Extracted honey packed in second-hand cans.
Unripe or fermenting honey weighing less than 12 lbs. per gallon.
Honey contaminated by excessive use of smoke.
Honey contaminated by honey-dew.
Honey not properly strained.

YOU DON'T WAIT FOR MONEY WHEN YOU SHIP MUTH YOUR HONEY

We Remit the Day Shipments Arrive.

We are in the market to buy **FANCY AND NUMBER ONE WHITE COMB HONEY**, in no-drip glass front cases. Tell us what you have to offer and name your price delivered here.

Will also buy—

White Clover extracted and Amber extracted.
A few cars of California Water White Sage.
A few cars of California Orange Blossom.

When offering extracted honey mail us a sample and give your lowest price delivered here, we buy every time you name a good price.

We do beeswax rendering; ship us your old combs and cappings. Write us for terms.

THE FRED. W. MUTH CO.

"THE BUSY BEE MEN"

204 Walnut Street.

CINCINNATI, O.

HONEY MARKETS

BASIS OF PRICE QUOTATIONS.

The prices listed below, unless otherwise stated, are those at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

LOS ANGELES.—Most of the honey is harvested, and the limited crop has been a great disappointment; even Imperial Valley (the sure-crop country) fell down worse than ever before. The whole of southern California has not produced over twenty-five per cent of a crop, or one-half as much as in 1914 or 1915, which were about fifty per cent seasons. Most of the extracted honey has been sold at high prices, but the demand is falling off and prices range about one-fourth of a cent lower. Prices being paid producers, f. o. b. common shipping point, in carloads: Extracted, white, 6½; light amber, 5½ to 6; amber, 5. Comb ranges from \$2.25 to \$2.75 per case. We were offered a car of No. 1 and fancy white Inyo County comb today at \$2.75 per case.

Los Angeles, Sept. 7. G. L. EMERSON.

ST. LOUIS.—Weather conditions will soon improve the demand for honey. Our market is in good condition for receipts of extra fancy comb honey, as receipts from local growers so far have been very light. Southern extracted is in good demand, with stocks just about ample. We quote comb honey, extra fancy (per case), \$3.25; fancy, \$3.00; No. 1, \$2.75; No. 2, \$2.50; extracted white, per lb., 8½ to 9; light amber, in cans, 6½ to 7; barrels, 6 to 6½; amber, in cans, 6 to 6½; in barrels, 5 to 5½. Clean average yellow beeswax brings 28½.

St. Louis. R. HARTMANN PRODUCE CO.

PHOENIX.—Demand good; in light orders, less than car lots, a shade better than at the opening of the season. Car lots of amber are somewhat lower—at least ½ ct. per lb. Extracted honey, white, brings, per lb., 7 cts.; light amber in cans, 5½. Clean average yellow beeswax brings 26 to 27.

Phoenix, Sept. 13. WM. LOSSING.

IDAHO FALLS.—Demand this season exceeds the supply, as the crop was almost a total failure. Practically all of the honey produced has been sold, and we have nothing to offer for market. We quote fancy comb honey at \$3.25; No. 1, \$3.00; No. 2, \$2.75. Extracted white brings 7½ to 10.

IDAHO HONEY-PRODUCERS' ASSOCIATION.
Idaho Falls, Sept. 25.

CHICAGO.—The supply is heavy, but the quality is of the best where it has been properly ripened. Dealers are expecting to sell more than the usual quantities, as the flavor is of the kind that asks for the second helping. We quote extra fancy comb honey, per case, 16 cts. in sealed cartons; fancy, 15, cartons or plain; No. 1, 14; No. 2, 12 to 13. White extracted, per lb., 7 to 8; light amber, in cans, 6 to 7; barrels, 6 to 6½; amber, in cans, 5 to 6; in barrels, 5 to 5½. Clean average yellow beeswax brings 30 to 32.

Chicago, Sept. 16. R. A. BURNETT & CO.

ALBANY.—Increased demand for honey as soon as the weather is cooler. Receipts are light, more on account of beekeepers delaying getting ready than lack of honey. Honey-producers make mistake in not sending their honey to market as early as possible for best prices. Extra fancy comb, per case, 16; fancy, 15; No. 1, 14 to 15; No. 2, 13. White extracted honey, 8½ to 9; light amber, in cans, 7½ to 8; amber, in cans, 7½. Clean average yellow beeswax brings 32 cts. per lb.

Albany, Sept. 20. H. R. WRIGHT.

KANSAS CITY.—Honey demand is slow; offerings in car lots are increasing. We quote extra fancy comb honey, per case, \$3.00 to \$3.25; No. 1, \$2.75. White extracted honey brings 8½ in jobbing way; light amber, in cans, 7 to 8; amber, in cans, 7. Clean average yellow beeswax brings 25 cts.

C. C. CLEMONS PRODUCE CO.
Kansas City, Sept. 20.

INDIANAPOLIS.—The demand for both extracted and comb is not as good as it should be for this time of the season. Very little honey has reached us so far, and what has is not of extra-good quality. However, we are quite sure there will be a heavy demand for glass goods next month. No. 1 comb brings \$4.00 per case; No. 2, \$3.50 and \$3.60. White extracted brings 10 to 11.

Indianapolis, Ind. WALTER S. POWDER.

CINCINNATI.—The demand for comb honey is not as good as it was last season. We are selling No. 1 comb honey, 24 sections to the case, at \$3.75 per case; lower grades are not wanted at any price. White-clover extracted honey in 60-lb. cans, 7½ to 9; amber extracted in barrels, 6½ to 7½. The above are our selling prices, and we buy at less than the above prices. We are paying 28 cts. per lb. for choice bright yellow beeswax.

Cincinnati, Sept. 16. THE FRED W. MUTH CO.

CLEVELAND.—There is no special change in our market since our last quotations. The supply is very limited, but is fully equal to the demand, which is extremely light thus far. We quote fancy comb honey, \$3.85 to \$4.00 per case; No. 1, none in market.

Cleveland, Sept. 18. C. CHANDLER'S SONS.

PORTLAND.—Reports in general are of a good honey crop, far above the average, A1 quality, with mountain districts still to be reckoned with. No 1 is selling at 20 cts. per section; 2 for 35 cts., retail; wholesaling at about \$3.00 per case of 24 lbs.

Portland, Sept. 19. PORTLAND SEED CO.

PITTSBURGH.—Demand not as yet opened up. Moving out slowly. We quote comb honey, extra fancy, per case, \$4.25; fancy, \$4.00; No. 1, \$3.75; No. 2, \$3.00 to \$3.25.

Pittsburgh, Sept. 26. W. E. OSBORN CO.

MONTREAL.—Clover crop this year was up to the average; quality very good. Buckwheat crop is late, and below the average in quantity. We quote extra fancy comb honey, 16; fancy, 15; No. 1, 14 No. 2, 12. White extracted honey brings 11; light amber, in cans, 10; in barrels, 9½; amber, in cans, 9; in barrels, 8½.

Montreal, Sept. 20. GUNN, LANGLOIS & CO.

HAMILTON.—Honey is a good crop, quality fine. We quote comb honey, extra fancy, per case, \$2.35 per dozen; fancy, \$2.25; No. 1, \$2.00; white extracted, per lb., 12, in 60-lb. cans; light amber, in cans, 11½.

MACNAB ST. BRANCH, F. W. FEARMAN CO., Ltd.
Hamilton, Ont., Sept. 20.

TORONTO.—The honey crop in Ontario, Canada, was of good quality, and abundant; and, owing to the scarcity of fruits, it is expected that good prices for honey will obtain. We quote white extracted, 60-lb. tins, at 12½.

Toronto, Sept. 16. ELY-BLAIN, Ltd.

MATANZAS.—Amber honey in barrels and cans, 46 cts. per gallon.

Matanzas, Cuba, Sept. 20. ADOLFO MARZOL.

MEDINA.—We have had an active demand for comb as well as extracted honey the past month, as is usually the case in September. Offerings of eastern honey are much larger than usual, and average prices slightly lower than last year. Western prices are variable, due to crop conditions. Old stock (1915) comb honey seems to be nearly all cleared up. Offers were received from Ohio producers today on first-quality white-clover extracted at 7½ cts. f. o. b. shipping-point. Others are holding at 7½ to 8. Comb is being offered us at \$3.00 per case for fancy white; No. 1 at \$2.75 delivered at Medina.

Medina, Sept. 28. THE A. I. ROOT CO.

Gleanings in Bee Culture

E. R. ROOT

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Contents for October 1, 1916

EDITORIAL	901	GENERAL CORRESPONDENCE	913
Italians as Swarmers	901, 908	Queens to Breed from	914
Mid-winter Breeding	901, 915	Two-colony Winter Case	916
Selling Honey to Trainmen	902	Colors of Flowers, Cause of	918
Disappearing Disease in Tennessee	902, 907	Queens Mistaking their Entrances	919
Diagnosis of Colonies	902	Division-boards, when Necessary	920
Wintering Hives Buried in Snow	903	Stings, Protection against	921
European Foul Brood in Colorado	903	Marketing of Honey Made Easy	922
Glassed Comb Honey Obsolete	903	Wintering in Montreal	922
Extension Work in the South	904	Color Variation in Honey	923
STRAY STRAWS	905	Bees Help in 3000-tree Orchard	924
Queen-cells, Small	905	Winter Losses Light	925
Hatching, Time of	905	Bee Demonstration, Gray's	926
Division-boards of Paper	905	Field Meet at Medina	927
Foul Brood and Honey	905	Making Colonies by Feeding Syrup	930
DIXIE BEE	906	Feeding over Brood-chamber	930
NOTES FROM CANADA	908	Aphorisms by A. C. Miller	931
Season in Canada	908	Moving Bees Short Distances	933
Drawn Combs Necessary	908	HEADS OF GRAIN	935
Buckwheat Honey for Wintering	908	Requeening a Whole Locality	935
Examining Bees Weekly	909	Newspaper-wrapped Hives	935
BEEKEEPING IN CALIFORNIA	910	Uniting and Feeding Screen	936
Local Ordinances, Power of	910	Candy for Wintering	936
BEEKEEPING AMONG THE ROCKIES	911	Floor-board, Desmond's	937
Alfalfa Weevil	911	GLEANINGS FROM QUESTIONINGS	940
European Foul Brood in Colorado	911	OUR HOMES	941
CONVERSATIONS WITH DOOLITTLE	912	HIGH-PRESSURE GARDENING	944
Shipping Comb Honey	912	POULTRY DEPARTMENT	945
Sacbrood, Effects of	913	TEMPERANCE	946

Golden and Three-band Italian Queens . . . 45c

We guarantee them to be as good as money can buy. Our breeders are of the very best, our methods are the best known. If they are not satisfactory you can get your money back for the asking. Where can you get any more for big money? Virgins, 25 cts.; untested, one, 45 cts.; 12, \$5.00; 100, \$40.00; tested queens, 75 cts. Prices of Dr. Miller's strain: Virgins, 50 cts. each; 12 for \$5.00; untested, 60 cts.; 12 for \$6.00. Tested, \$2.00; select tested, \$3.50; breeders, \$5.00 to \$10.00. Will replace inferior queens. Capacity over 2000 per month. Safe arrival and satisfaction guaranteed.

The Stover Apiaries, Mayhew, Miss.

Special Notices by A. I. Root

THE NATIONAL TEMPERANCE SOCIETY OF NEW YORK.

I feel ashamed to confess that it is only recently my attention has been called to the fact that the National Temperance Society of New York is not only the *oldest* temperance society but perhaps one of the best equipped of any in the land, or may be in the whole wide world. As it is non-partisan, like the Anti-saloon League, I cannot understand just why the Anti-saloon League has not had more to say in regard to it or why it has not been more closely affiliated with it. Well, this temperance society publishes three bright and beautiful periodicals—first, the National Advocate, now in its 51st year; second, the *Youth's Temperance Banner*, also in its 51st year—one of the brightest and prettiest little monthlies that I have ever gotten hold of, and *The Water Lily*, a monthly for children, that is worth its price, and ever so much more, to look at the pictures if nothing else. The price of all three periodicals is ridiculously low. The weekly is only \$1.00 a year; the *Youth's Temperance Banner* is only 30 cents, and the *Water Lily* only 15 cents. If you do not subscribe, send at least for sample copies and see if I am not right in thinking them among the very best periodicals for the home—especially a home where there are children.

NOT CERTAIN HE IS GUILTY.

As we go to press we learn by the papers that the colored man mentioned in last issue may not be the guilty party after all. What about mob law and the work of "mob tonic" now?

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF GLEANINGS IN BEE CULTURE, PUBLISHED SEMI-MONTHLY AT MEDINA, OHIO, REQUIRED BY THE ACT OF AUGUST 24, 1912.

Editor, E. R. Root, Medina, Ohio; Managing Editor, H. H. Root, Medina, Ohio; Business Manager, J. T. Calvert, Medina, Ohio; Publisher, The A. I. Root Co., Medina, Ohio.

Owners: The A. I. Root Co. Stockholders holding 1 per cent or more stock as follows:

A. I. Root, Medina, Ohio; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; A. L. Boyden, Medina, Ohio; L. W. Boyden, Medina, Ohio; J. T. Calvert, Medina, Ohio; Frank Spellman, Medina, Ohio; H. E. Aylard, Gdn., Medina, Ohio; A. A. Bostwick, Seville, Ohio.

There are no bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities.

(Signed) E. R. ROOT, Editor.

Sworn to and subscribed before me this 28th day of September, 1916.

(Signed) FRANK SPELLMAN,

[SEAL] Notary Public.
(My commission expires Feb. 17, 1917.)

BANKING BY MAIL AT 4%

Only One Dollar

That is all that you need to open a savings account in this strong safe bank, BY MAIL, where 4 per cent interest, compounded twice a year, is paid.

Complete safety for all deposits is assured by our capital and surplus of \$100,000, conservative management, and strict state supervision.

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E.B. SPITZER, Cashier.

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Untested remainder of the season 75 cts. each; \$4.25 for six; \$8.00 for 12. Tested, \$1.00 each in any quantity. Satisfaction in all cases or money refunded. Been breeding queens for sale for 25 years, and we know how.

L. H. Robey, Worthington, W. Va.



Fine Yellow Italian Tested Queens

only \$1 each, or I will send 3 for \$2. Carload Italian bees at \$3.90 a stand, 8 and 10 Hoffman frames, if sold this fall; 200 stands. Will take \$4.50 next spring.
J. L. FAJEN, Stover, Mo.

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- Tenement Winter Cases
- Buckeye Bee Hives
- Shipping Cases
- Five-gallon Cans
- Five and Ten Pound Pails

Four per cent Discount on Goods for Next Year's Use

M. H. Hunt & Son, 510 N. Cedar St., Lansing, Mich.

"If Goods are Wanted Quick Send to Indianapolis"

Indications just now are very favorable for a good season; but we are, of course, at the mercy of the weather conditions. A good season means an excessive demand for the line which we handle, and we mention this, urging our friends to place their orders before the goods are really needed, that none may be disappointed.

We carry Root's goods and sell at their prices; and considering this as a shipping-point, we can save you time and freight by having your orders come to this house.

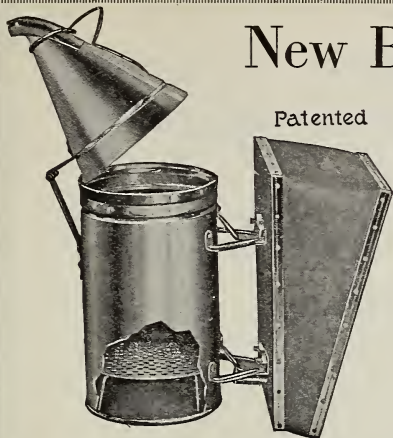
If you are new to the business we should like to explain that Root's goods are the very best that can be produced. If you have been using THE ROOT LINE you will recognize the truthfulness of the above and will want more of the same goods.

Promptness in filling orders is the motto here. We also give small orders the same careful attention that are given to large orders.

Let us have the pleasure of mailing you our free catalog.

Walter S. Pouder, Indianapolis, Ind.

873 Massachusetts Avenue



New Bingham Bee Smoker

Patented

has been on the market nearly forty years, and is the standard in this and many foreign countries. It is the all-important tool of the most extensive honey-producers of the world. For sale direct or by all dealers in beekeepers' supplies.

Smoke Engine, 4-inch stove.....\$1.25
 Doctor, 3 1/2-inch stove85
 Two above sizes in copper, 50 cts. extra.
 Conqueror, 3-inch stove75
 Little Wonder, 2 1/2-inch stove..... .50
 Hinged cover on two larger sizes. Postage extra.

TIN HONEY-CANS---LOW PRICES

Five-pound friction-top pails, lots of 50 at \$2.75; 100 lots, \$5.20; crates of 203 at \$10.00.

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Sixty-pound cans, two in a case, 70 cts. per case. Quantity lots, 67 cts. per case; crates of 50 at \$12, f. o. b. Chicago or Ohio factory. Prompt shipments are being made at this time.

A. G. WOODMAN COMPANY, Grand Rapids, Michigan

PENNSYLVANIA BEEKEEPERS

Our 1916 catalogs now out. Postal will bring you one. Root's goods at Root's prices. Prompt shipment.

E. M. Dunkel, Osceola Mills, Pa.

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of Honey and Wax**

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We conduct this department for the special benefit of our subscribers. Experts answer all questions by mail and through the columns of the magazine.

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Established 1885



Send for our 64-page free catalog of Beekeepers' Supplies--full of information regarding bee fixtures, etc. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co., High Hill, Mo.
 Montgomery County

BEE SUPPLIES Send your name for new 1916 catalog.

Dept. T, CLEMONS BEE SUPPLY CO.,
 128 Grand Avenue, Kansas City, Mo.

BEESWAX WANTED

for manufacture into
 "SUPERIOR FOUNDATION"
 on shares (Weed process)

Our terms assure cheaper foundation
 SUPERIOR HONEY CO., Ogden, Utah
 Wanted: Extracted honey

3 Garden Tools in 1 The BARKER Weeder, Mulcher and Cultivator

The only garden tool that successfully, in one operation, kills weeds, and forms a complete soil mulch to hold moisture. "Best Weed Killer Ever Used." A boy with a Barker beats ten men with hoes. Has shovels for deeper cultivation. Self adjusting. Costs little. Write for illustrated folder and special Factory-to-User offer.

SEE
THE
KNIVES



Barker Mfg. Co.
 Box 117 David City, Nebr.

For New England

Beekeepers, we have everything you need in the way of supplies. Remember we are in the shipping center of New England. Let me send you a new catalog.

H. H. Jepson, 182 Friend St., Boston, Mass.

PATENTS

Practice in Patent Office and Courts
 Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building
 WASHINGTON, D. C.

Gleanings in Bee Culture

DEVOTED TO HONEY, BEES, AND HOME INTERESTS

Established 1873

Issued semi-monthly.

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Based on 20,000 circulation guaranteed.

Display, per agate line, flat, 15 cts.

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THE A. I. ROOT COMPANY, Publishers
MEDINA, OHIO

Index to Advertisements

BANKING BY MAIL

Savings Deposit Bank....895

BEE SUPPLIES

Clemons Co.897

Dadant & Sons900

Dunkel, E. M.897

Falconer, W. T.891

Hunt, M. H.896

Jepson, H. H.897

Lewis, G. B.900

Nebel, J.897

Pouder, W. S.896

Root Co., Syracuse899

Stringham, I. J.953

Superior Honey Co.897

Woodman, A. G.897

BEES AND QUEENS

Achord, W. D.cover

Fajen, J. L.895

Forehand, L. L.949

Forehand, W. J.949

Lockhart, F. A.949

Leininger, F. S.949

Moore, J. P.949

Mott, E. E.829

Quirin, H. G.949

Robey, L. H.893

Stover Apiaries895

Wardell, F. J.949

CLASSIFIED ADS.

Bees and Queens951

For Sale950

Honey and Wax Wanted. .950

Honey and Wax for Sale. .950

Patents950

Poultry951

Real Estate951

Wants and Exchanges....951

LAMPS

Best Light Co.953

HONEY-DEALERS

Los Angeles Honey Co...897

Muth Co., F. W.....892

Weber, C. H. W. & Co..899

MACHINERY

Barnes, W. F. & J.....953

Barker Mfg. Co.897

PATENTS

Williamson, C. J.897

PUBLICATIONS

Guide to Nature953

Fruitman and Gardener..897

SPRAY PUMPS

Myers, F. E.953

Pratt, B. G.953

STOVES

Kalamazoo Stove Co.953

Wanted---Honey

Both Comb and Extracted

If comb honey, state grade and how it is put up, and your lowest price delivered Cincinnati.

Extracted honey, mail a fair-sized sample, state how it is put up, and your lowest price delivered Cincinnati.

If prices are right we can use unlimited quantities.

C. H. W. Weber & Company, Cincinnati, O.

2146 Central Avenue

WHY NOT

Order Your Supplies for Next Season Now?

This last season was an unusual one and beekeepers felt the need of supplies during the honey season. It meant a loss to them if not on hand. Freight this year has been slow for some reason. Why not be forehanded and have the goods on hand when wanted? We try to get goods off promptly but the railroads were slow in making delivery---a month or more in some instances. Goods ordered now carry 4 per cent discount during October. Send in your order just as soon as you find out just what you require and we will take care of it promptly.

F. A. SALISBURY, Syracuse, New York

1631 West Genesee St.

HOW ABOUT NEXT YEAR?

The season of 1916, just closed, has been a most unusual ones. Beekeepers who did not fortify themselves early in the season by securing their hives, sections, and other goods, and having their equipment ready for the bees, found that when the honey season was upon them that they were up against the following conditions:

Everybody wanted bee goods, dealers had depleted stocks on account of the unusual demand, manufacturers were several weeks behind on orders, their factories were working overtime. Some beekeepers were delayed, some disappointed, some got their goods when it was too late.

Now, Mr. Beekeeper, What are You Going to do about Next Season? ? ?

Prospects for a big Bee and Honey Season next year were never better than they are right now. **PREPARE!** Order your goods this fall. Write us or our dealer nearest you for a list of new prices owing to advances in raw material.

If you are not on our mailing list, write us at once and we will send you a catalog containing name of the distributor nearest you, and in this way you will also be sure to receive a copy of our new 1917 catalog when it is issued.

Lewis Hives and Sections and all other goods are made from the best material and are scientifically manufactured.

OUR GUARANTEE.

We absolutely guarantee our goods to be perfectly manufactured of the best material for the purpose. On examination, if our goods are not as represented, we do not ask you to keep them. Return same at our expense, and we will refund your money, including any transportation charges you have paid. If you purchase our goods from one of our distributors, this same guarantee holds good, as we stand back of them.

G. B. Lewis Company, Watertown, Wisconsin, U. S. A.

Send for catalog giving name of distributor nearest you.

DO YOU WANT Your Bee Supplies Shipped Promptly?

We carry from four to six carloads of the finest BEEWARE on hand at all times, and can fill your orders without delay. . . . **BEE-HIVES, SECTIONS, Shipping-cases, Tin Cans, and all other Bee Supplies; also**

Dadant's Foundation

by return freight, mail, or express

DADANT & SONS, Hamilton, Ill. Dear Sirs:—The box of foundation arrived a few days ago in fine condition. I have kept bees for over thirty years, and have purchased foundation from many firms, and must say that your foundation is the nicest that I have ever used, and I wish to thank you for the prompt shipment and large amount of wax you secured for me.

A. W. DARBY, Alburg, Vt., May 3, 1916.

We have forty years' experience and thousands of satisfied customers. Are you one of them?

Dadant & Sons, Hamilton, Illinois

GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio.

E. R. Root, Editor

A. I. Root, Editor Home Department

H. H. Root, Managing Editor

J. T. CALVERT, Business Manager

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OCTOBER 1, 1916

NO. 19

EDITORIAL

DON'T fail to read honey-market quotations this issue, page 893.

THE beautiful picture of basswood on our cover for this issue is the work of Dr. E. F. Bigelow.

Wrapping Hives in Newspapers for Winter

THIS practice will do very well where the climate is not severe. The plan spoken of by J. A. Allard, on page 936, will answer some winters; but it should not be relied on. A super with packing on top is quite important; but better by far have packing on four sides as well as top.

Net-weight Law Not Effective in Iowa

THE pure-food commissioner of Iowa has explained to our representative that the Iowa law, as it now stands, does not make it necessary to mark the minimum or net weight on sections mentioned by Mr. Pellett on page 773. While this may be true, we still feel that it is very important that every Iowa beekeeper mark the minimum weights on his sections as has been explained in these columns.

Italians Less Inclined to Swarm than Blacks

MR. J. L. BYER, in his department in this issue, exactly voices our opinions and experiences in opposition to Mr. Allen Latham when he says Italians, in the production of extracted honey, are much less inclined to swarm than Caucasians and blacks; and why Mr. Latham finds the reverse to be true he is not able to understand. We shall have to charge up the difference to locality, for

Mr. Latham is a good beekeeper and a careful observer.

Two-colony Winter Cases

THERE is a good deal in favor of a double winter case as described by Mr. Wiggins in this issue, page 916. The expense of housing a colony of bees, however, is necessarily a little more than where four hives are put in a case. It is a question whether the extra expense fully compensates for the disadvantage.

Sealed Covers vs. Absorbents

MR. W. S. WIGGINS, in this issue, page 916, wishes to know why we advocate sealed covers in place of absorbents. We advocate it only for this locality; if Mr. Wiggins will turn to our book, the A B C and X Y Z of Bee Culture, he will see we distinctly state that the matter has to be determined by local conditions.

A Division-board when it is Too Much of a Good Thing

THE average beekeeper, when he gets a hive with a full complement of frames and division-board, seems to have the impression that the division-board should be left in the hive. Ordinarily the division-board should not be used except when there is less than the full number of frames. We therefore agree with Mr. Tarlton-Rayment on this point on page 920 of this issue.

Mid-winter Breeding

IT will be remembered that some years ago we were successful in building up some weak colonies in one of our bee-cellars by feeding candy during January and February. Ordinarily the practice is not to be recommended; but our colonies were short of stores in one of the yards, and we were

compelled to feed. They were not only short but quite weak. The candy feeding in the spring resulted in some fine booming colonies. We succeeded that winter but we did not succeed another winter. Taking it all in all, we quite agree with our correspondent J. E. Hand in what he says in this issue on page 915.

Easy Way of Selling Honey

LAST winter we had a visit from G. W. Bell, of Bell's Landing, Pa. Mr. Bell has a unique method of disposing of a part of his crop without any effort. He lives on the New York Central Railroad, and there are six passenger trains a day, besides a number of freight trains. Of the twelve conductors on the passenger trains there is only one who does not buy honey. The brakemen also buy considerable, as do also some of the crew of the freight trains.

The trainmen first started buying honey by seeing shipments of his honey, and so they gradually began buying, taking more and more until he disposes of about 1000 pounds of comb honey a year in this way with absolutely no effort on his part.

Mr. Bell produces comb honey principally, altho he does considerable extracting as well. He has a rack for holding sections, and he extracts all the honey from the unfinished sections, and uses the combs for baits the next season.

A Honey-Advertising Campaign

THE A. I. Root Company's full-page honey advertisement in the *Ladies' Home Journal* and *Good Housekeeping*, reaching five million readers, is apparently having its effect. When all the prospects looked favorable for a big crop of honey in the East, and when it was apparent early in the season that the honey market was on the toboggan slide, going down, down, down, an aggressive movement was decided on. The campaign featured the advertising of honey as a food, and, of course, the Airline brand in particular.

The October *Ladies' Home Journal* reached the housewives, the particular buyers of honey, Sept. 20, all over the United States.

Later.—What one of the largest distributors of honey in the West thinks of this is shown by the following:

We have just seen the October number of the *Ladies' Home Journal* and have admired the full-page advertisement your firm has in same regarding Airline honey. It is certainly very tastily gotten out and ought to bring

good results. Every beekeeper should appreciate what you are doing to popularize the use of honey in the home.

The Colorado Honey-producers' Ass'n,
F. Rauchfuss, Manager.
Denver, Col., Sept. 22.

The Disappearing Disease in Mrs. Allen's Apiary

IN this issue, page 907, Mrs. Allen describes exactly the symptoms of what was supposed to be the Isle of Wight disease in the western part of Ohio, and which created quite a stir in the newspapers, especially when it was learned that a representative from Great Britain, and two or three representatives from the bee-inspection department of Ohio, were to make an investigation. As our readers now know, nothing very serious was found, and the trouble has entirely disappeared. It seems that Mrs. Allen found exactly the same thing in one of her colonies. At all events, she gives the exact symptoms that we found at Weston. Whatever it was or is, the disappearing disease has disappeared. The same disease that showed itself in Oregon, down the Mississippi Valley, in parts of Texas and Oklahoma, and which threatened to wipe out whole colonies last season, did not appear this year.

Wintering Hives Buried in the Snow

ON page 322 of this issue Mr. John Mack shows his hives almost entirely buried in snow. Notwithstanding the hives were buried from November till March 25, he wintered without loss. But when the climate is such that the weather changes from warm to cold, so the snow thaws enough to cause the water to run into the entrances, and then freeze, there is danger of a severe loss. At outyards where it is practical to get the snow away from the entrances it is best to do so when the weather is changeable. On the other hand, where the weather is mild and there is changeable weather, the snow will not be very deep. Where the climate is cold enough so that it does not warm up all winter, bees can lie buried in the snow without much danger. Like everything else in bee culture, this is a matter of locality.

Diagnosing Colonies by External Indications

WE regard Mr. J. L. Byer, of Markham, Ontario, as one of the best beekeepers on the continent. He started with absolutely nothing, raised a family, and now is one of

the successful producers in Ontario. It was with no little interest that we read his endorsement of our editorial on page 775—especially where he says that that method of diagnosing has been a common practice with him during the past season. We feel sure that many beekeepers are wasting time in digging down into the brood-nest and lifting heavy supers in the busy part of the year, and when it is practically impossible to hire skilled help. A good many, if they only think so, can determine the condition of their colonies, so far as mere room is concerned, in a very short time, and without taking out a single frame.

If one is running for the production of *comb* honey, he may have to pull out some frames to find queen-cells; but in the production of extracted honey he can often keep ahead of the bees, as Mr. Byer explains in this issue, without doing any heavy lifting or pulling out the frames. Of course, a beginner or an ordinary beekeeper could not do this kind of diagnosing.

Honey-crop Conditions and Prices; Market Recovering

At this time we are in possession of definite information showing that the honey crop in the great West is somewhat lighter than usual—so much so that the large crop in the East may not be able to take care of the market demand. At all events, it is apparent that the general market on honey has stiffened. Whether it will go higher than present quotations, as shown by our Honey Column, we are not able to say. Apparently all of last year's comb honey has been cleaned up, and the demand for both comb and extracted at this writing is brisk.

The rising prices on other food commodities and the fact that the total amount of honey produced in the United States, including the East as well as the West, is possibly no larger than usual, will have a decided effect in making the market firm, altho it is very doubtful if it will reach the quotations of last year. About the time beekeepers begin to dump their comb and extracted honey in the big marketing centers (and that will be from the first to the middle of November), prices will probably ease up. This is strictly in accordance with all past experience. If possible, producers should get their crops on the market earlier before the usual congestion.

A careful survey of the government weather maps (which we are getting daily) shows that the drouth of late summer has probably been broken in most clover local-

ities. Some reports already in show that clover is recovering nicely. On the other hand, our Canadian correspondent, Mr. Byer, refers to the drouth in Ontario as being so severe that buckwheat is practically a failure.

Later.—Since the above was written, later quotations printed on page 893 would indicate a more conservative trend in the market than what we have indicated.

Still later.—The following report from Idaho Falls, Ida., dated Sept. 25, has just been received from the Idaho Honey-producers' Association, and gives the honey-supply condition in a section that last year produced an immense amount of comb honey. "Our crop has been practically a total failure this season. What little there was is all sold, and we have nothing to offer for market. There will be no honey in this section until another crop is raised next year."

European Foul Brood being Brought under Control in Colorado

In this issue our correspondent, Mr. Wesley Foster, tells us that European foul brood is being brought under control in Colorado; and he hopes that in the near future it will be stamped out.

Nearly all beekeepers in Colorado produce comb honey on a commercial scale. Most of them are good beekeepers—men who are posted in regard to the latest developments concerning this disease. Italian queens of resistant strains are being introduced. The dequeening and requeening treatment is being employed without the destruction of combs with good results.

The Colorado beekeepers are right in line with the very best practices now in vogue with respect to the European disease. It is probable that this disease will never make very much headway in Colorado or among up-to-date beekeepers—those who are posted; but it will eliminate the careless and the ignorant. One who does not take a bee-paper of any kind, and has only a few colonies on the farm, is being forced out of business.

Glassed vs. Cartoned Comb Honey

SINCE the net-weight provisions of the national pure-food law went into effect, sections of comb honey with glass panels have almost entirely disappeared from the market. Formerly the glass was sold at the price of the comb honey; and under this order of things the producer could well afford to glass his sections, for he could sell the glass at the price of the honey and make

a big profit; but that day has passed. When Uncle Sam put out the ruling that comb honey would hereafter have to be sold at its actual or minimum net weight, exclusive of its container, sections, carton, or glass, it eliminated the glass and put cartons to the front.

A correspondent from Buffalo writes us that he has about 3000 lbs. of the last year's crop of comb honey, glassed on both sides. He has been trying to find a buyer for it, and he appears to be willing to take any kind of offer. He says it is all New York state comb honey, but apparently nobody wants it. He has been to great expense in putting it up in glass, and now he must sell it, if he sells it at all, at the mere price of the comb exclusive of the weight of the section and glass.

We cautioned our readers against putting up comb honey in glass, at the time the new ruling went into effect; but apparently some of the beekeepers of the state did not see it; or if they did they did not see the point—namely, that glass cannot be sold any more at the price of comb honey.

In this connection it is interesting to observe that cartoned honey is becoming more and more popular. Cartons are inexpensive. They protect the section as well as the comb honey, and practically eliminate broken comb honey during shipment, because they cushion the delicate combs in such a way that they absorb the shocks and jars incident to transportation. Moreover, they are more sanitary. Some cities have already passed ordinances requiring all packages of food to be sealed, away from flies and dust. 'Tis well.

Extension Work in the South; Increased Appropriation for Bee Culture in Washington

THE members of the National Beekeepers' Association will remember that a committee of two, consisting of Mr. Frank C. Pellett, of Iowa, and E. R. Root, of Ohio, were appointed to see what they could do toward securing an additional appropriation for apiculture in the Bureau of Entomology, Washington, D. C. Both Mr. Pellett and Mr. Root appeared before the Agricultural Committee. Altho they did not secure as large an appropriation as they hoped, they did succeed in getting an increase of \$5000. While there was some opposition on the floor of the House, Congressman Leaver, chairman of the committee, and Congressman Anderson, an influential member of the committee, put it thru.

This increase of \$5000 makes a total appropriation for apiculture of \$25,000. As to how the \$5000 increase is to be used will be explained in a letter from Dr. Phillips from the Bureau, which follows:

Mr. E. R. Root:—You may be interested in learning that the present agricultural appropriation bill carries an increase of \$5000 for the work in beekeeping in this Bureau. It is proposed using this fund to inaugurate extension and demonstration work in beekeeping in the southern states, similar to the work done by Mr. E. G. Carr for this Bureau last year in North Carolina. Arrangements have already been completed for the continuance of the work in North Carolina, in co-operation with the North Carolina Department of Agriculture, and Mr. George H. Rea, former inspector of apiaries of Pennsylvania, has gone to Raleigh to begin work. Negotiations are under way for similar work in another southern state, concerning which announcement will be made later. A third man is to be employed to do work of a more general character thruout the South, in co-operation with the Office of Extension Work in the South of this Department. In all cases the men employed are to work in close co-operation with the County Agricultural Agents.

The southern states offer great opportunity for beekeeping, and much interest has been shown in this work. There are no sections of the country where there are more bees, altho many of them receive inadequate care. An interesting fact is that the South now consumes almost all of its own honey, and buys some from other sections of the country. For these and many other reasons, it has seemed best to confine this work for the present to the southern states.

E. F. Phillips, Apiculturist.

Beekeeping in the South, in many portions, is in the box-hive or log-gum stage. While it is true that there are many good beekeepers there—some of the very best in the country—there are thousands and thousands who are keeping bees in the old-fashioned way. The bee-moth kills off a large number of the colonies, and bee disease is just making a start. Extension workers are already in the South, and it is now proposed to send experts to enlighten these extension workers so that they in turn can show these log-gum beekeepers how to keep bees, and at the same time vastly increase the yield per colony.

While the present appropriation for the work is only a drop in the bucket, it will mean a good start. The Southland has wonderful possibilities in the way of honey production; and as soon as its beekeepers are taught modern methods of honey production, the resources of these states will be vastly increased.

Mr. C. C. Miller

STRAY STRAWS

Marengo, Ill.



A MISSOURI correspondent asks how late in the season bees will build comb. They will build it as late as they gather any surplus, provided they need it for storing.

PAPER division-boards for introducing queens and uniting, p. 873, seems a variation of the newspaper plan that was born here. The variation is, no doubt, effective; but the plain newspaper plan is no doubt just as effective, and a good bit simpler and easier. Kill the old queen, lay a sheet of newspaper on the top-bars; over this set a hive-body containing the nucleus having the queen, and close bee-tight. That's all; in three, four, or more days you can shift brood-combs from upper to lower story.

MR. EDITOR, it might be a good plan to have a lot of labels printed with the words "Demaree plan," so as to label properly the plan every time it is sent in as something new. Its latest appearance is at the top of page 804, Sept. 1. Briefly, Put in upper story all but one brood, leaving in lower story one brood with queen, and filling vacancies with frames filled with comb or foundation. An excellent plan to prevent swarming, but please let it always have the proper label. [The suggestion is a good one. As the Demaree plan has been spoken of considerably it will be incorporated under the head of "Swarming, to Control," in the next edition of the A B C and X Y Z of Bee Culture.—Ed.]



JOHN A. MCKINNON has sent me two queen-cells I would not have supposed possible, and I am forwarding them herewith. The extreme length of one is $\frac{1}{2}$ inch; of the other 9-16. They are sealed, and he says contain larvæ less than 48 hours old, built by a strong three-story colony fed a quart of syrup daily. I don't think I ever before saw a sealed queen-cell with a larva less than 72 hours old, and the cell was always full length.

P. C. CHADWICK, p. 718, I'm with you and fornenst Wesley Foster. I'm a bit skeptical about there being such a great danger of disease thru surplus sold on the market. I've had some experience in feeding honey stored by colonies having Euro-

pean foul brood, and never knew it to convey the disease. Of course that doesn't prove it never does. I know of two cases of American foul brood treated in this way: The colony was allowed to store a story of sealed combs. In the fall its brood-combs were exchanged for this story of sealed combs. Thus it was left with no honey but that which it had itself stored. Next year no sign of the disease appeared.

H. H. ROOT, even tho you claim the role of the "little dog," the beekeeping fraternity is indebted to you for a valuable contribution to apicultural literature. In nicety of exactness, that report of M. T. Pritchard as to the stages of the development of a young queen, p. 805, is the best of anything I know of on record. Many thanks, Mel. The most difficult thing I found in such experiments was to know within an hour just when the eggs were laid; but I never thought of emptying eggs out of the cells. Of course there will be variations, but under proper conditions for queen-rearing it is likely that Mr. Pritchard's figures may be taken as standard: from the laying of the egg to hatching, an hour or two less than 3 days (which agrees with the orthodox "three days" of many years); time from hatching of egg to sealing, from 5 days to 5 days 3 hours, which agrees with Cowan's 5 days (I have known larvæ in sealed cells so small that the time could hardly have been more than 3 days); and the time from laying of egg to emergence from cell from 15 days lacking $2\frac{1}{2}$ hours to an hour more than 15 days. This last is the most important item. It agrees with observations I made, pleading that, instead of continuing to say "16 days," we should call it "15 days." Fifty-five years ago it was 17 days, then for many years 16 days, and it's time now that we should say—correctly—15 days.

You give my estimate of time from hatching of egg to sealing in direct quotation, "never more than five days." Please play fair, Huber. I made no such positive assertion—didn't know—merely asked the question, "does it ever happen in more than five days?" Replying to your question, "What would these figures have been under less favorable circumstances, cool weather, weaker colony, etc.?" I reply, if it's any comfort to you, that the time might be "six to eight days" or more; but do we want to raise queens under such circumstances?

I'm ready to sic, but hardly see occasion to sic the "big dog."

Grace Allen

THE DIXIE BEE

Nashville, Tenn.



Now that we have requeened the rest of our little yard, we have nothing but pure-bred 1916 Italian queens in every hive. We hope in this way to winter well, to have no cross bees to bother our nice, polite neighbors next summer, and to be more nearly prepared to resist foul brood—when it comes; and come it surely will if not wiped out of this neighborhood promptly, for it has only to come down the pike a bit to start playing in our back yard.

I am increasingly aware that I can not handle full-depth supers. Right now, in mid-September, when they are nowhere near full, I come in really over-tired after lifting a few of them off and setting them back on, to get into brood-chambers. Eventually we shall probably be forced into shallow supers, and I don't happen to like them—nearly twice as many frames and bodies to handle, practically double the work getting the equipment put together, and a whole lot more expense. But—not much more than half the weight.

Tennessee farmers are adding every year to the acreage put into crimson clover, as well as sweet clover—a fact that rejoices the heart of the beemen as well as the farmers themselves. In a letter written this spring, Mr. Ben G. Davis says of Maury County, "Before the farmers began to use crimson clover here, we had a dearth of nectar from apple bloom till white clover. Now this is filled in nicely, as we have hundreds of acres of crimson clover all around us. We have also one neighbor who put in 25 acres of sweet clover this spring, another 20, and still another 5, so in a few years we hope for a midsummer flow, as I feel sure more of them will go into it when they find how fine a soil-builder it really is." Incidentally, those great fields of crimson clover in full bloom are wondrously beautiful.

Interesting indeed is the article, page 447, June 1, "The Changes which Occur in the Egg," by Dr. James A. Nelson. In the constant presence of such marvels as described therein, it would seem impossible for any beekeeper to lapse into the Peter Bell attitude of mind. Rather let us realize, with Dr. Nelson, that the "real riddle of development still remains unanswered," and

feel the same awe and wonder and reverence in our contemplation of a bee-egg in the waxen cell that Tennyson and the scientist who quoted him in the classroom felt toward the "flower in the crannied wall."

Referring to painting hives, I notice that Mr. Miles, page 475, June 15, says that paint for the first coat on new work should be thinned with pure linseed oil. Our paint-man tells us that for new work on pine the first coat is better thinned with linseed oil and turpentine mixed, 1-3 oil and 2-3 turpentine; for the second coat, reverse the proportion, making it 2-3 oil and 1-3 turpentine; for the third coat, all oil, no turpentine. This heavy proportion of turpentine in the first coat is particularly important on southern pine, he stated, while for northern pine a smaller per cent might be used, the third coat in each case being thinned with the pure linseed oil.

I believe it was the lack of shade that lost us a swarm. Ten days after we had requeened a certain strong colony with a very disagreeable disposition, they cast a swarm. Knowing that the queen, whether the one given them or one of their own rearing, was unclipped, I labored mightily that hot day to hive them. Mr. Allen was in town, four miles away, and standing in the tippest top of a step-ladder, reaching up into space and the bees and a peach-tree, was strenuous work, especially for one taking things a bit easily. This summer; but finally I had them more or less inside an unpainted shallow hive, the only one I had, with several drawn combs. I was wise enough that day to give them shade—such a hot little home—but as the improvised shade-board was an essential part of a chicken-house it was removed that evening. In the morning I neglected either to replace it or to provide another; and while I was away from home, out came our swarm and flew to parts unknown, leaving eggs behind. Well, the next time there'll be shade.

The editor asks for reports from those who have tried the Fowls adaptation of the Alexander method of making increase. Both last year and this we tried it in a limited way, and it has worked satisfactorily both seasons, except that, with us, the bees in the original brood-chamber, set off later to the new stand, have not stored any surplus. Of

course last year there was practically no surplus stored here by any colony, but this year things are different. Yet these bees with the old brood and the queen-cell, tho they have gathered some honey, have put it all into the brood-chamber, apparently not being strong enough to go up into the shallow supers. In the case of the old queens, however, left on the old stand with one frame of brood and nine sheets of foundation, things were better. Super work is continuing nicely this year, and there has been no lack of interest in the lower stories, as Mr. Brumfield experienced, page 457, June 1. Both years the foundation was drawn out rapidly, and soon the queens were laying in the new combs.

But Mr. Brumfield departed from Mr. Fowls' method in at least two points. He placed the old brood-chamber immediately above the queen-excluder, whereas Mr. Fowls especially emphasizes the necessity of two or three empty supers between. He also gave the upper story an entrance at the back, which Mr. Fowls does not. These points of difference may not account for the condition of neglect in the lower hive complained of by Mr. Brumfield; but, again, they may have been contributing factors. At any rate, does not swarm control thus practiced become an adaptation of the Fowls method rather than the Fowls method itself?

One day, about the first of June, we were greatly alarmed at the behavior of one colony. On the alighting-board, and on the grass all around the entrance, there were bees crawling and climbing, most of them apparently unable to fly. At the entrance, a first glance seemed to suggest that the colony was defending itself against robbers; yet there were no robbers in evidence. But every minute or two one or more bees would suddenly attack another and try to force her out, off the alighting-board. The ones so attacked always resisted, drawing back toward the hive, often into it and quite out of sight. Out they would ultimately be dragged, however, and it was a sorry spectacle indeed to see them all struggling, and finally dying there on the grass. The next day there was still a little of this same behavior, tho much less, and soon it had disappeared entirely. Nothing similar showed up in any other colony. I couldn't see anything peculiar in the appearance of the unfortunate bees, unless it was that so many of them had their tongues out! That seems comical, doesn't it? But there they were, tho I don't claim to have been a particularly close observer. This colony hasn't stored

much since then, but neither have the others, so we attribute that fact to the weather. There was nothing queer or different (that we noticed) in the interior of the hive when it was opened a few days later.

FOR BEGINNERS.

Better look over your hives once more this month. Be sure that no colony is queenless. Then see that each one has ample stores to get thru the winter, twenty-five or thirty pounds per hive. If you find some of them short, and have no extra honey to give them, make a syrup of two parts sugar to one part boiling water. Stir till the sugar is thoroly dissolved. You probably haven't any regular feeders. Just put an empty super on the hive to be fed; pour the syrup into an ordinary pan; place chips or tiny bits of wood on top for floaters for the bees to feed from; set the pan on the top-bars of the frames, and close the super. It is better to do this toward evening, as there is less chance of starting robbing. It is a good thing too to feed it warm. Count on giving them a pound, or nearly a pound, of sugar so prepared, for each pound of stores needed.

If you winter on summer stands you will soon be contracting the entrances; and if mice are troublesome in your neighborhood, you might put a strip of coarse wire cloth across the entrance also; about three wires to the inch is good. This will keep out mice, yet allow the bees to pass thru easily.

Evening.

Gently down the evening drift the quiet
brown and amber;
Slowly thru the meadow trails the dusk
on drowsy feet;
Softly from the fallen fence where honey-
suckles clamber
Steals a twilight witchery of dewiness
and sweet.

Wonderment and yearning irresistibly en-
fold us,
Pausing where the shining rows of hives
beneath the trees
Murmur so and murmur. Ah! what secrets
they have told us,
Secrets of the questing and the homing
of the bees.

Living out the miracle, questing on and
questing,
Drinking of the beauty of some distant,
dim desire,
Homing then at evening to the silence and
the resting—
Heart of mine, O heart of mine, what
more does life require?

NOTES FROM CANADA

J. L. Byer, Markham, Ont.



The severe drouth that started July 1 is still prevailing in many parts of Ontario at this date, Sept. 14. True, we have had a few light showers lately, but no rain to soak the ground, and, as a result, clover will be scarce in many parts of the province next year. No doubt some localities have been blessed with more rain than we have had here in York Co. as well as in the north part of Simcoe Co., where we have one apiary; but generally speaking it can be safely assumed that, in contrast to the great clover season of 1916, 1917 will be a lean year in that respect.

Page 362, May 1, Allen Latham uses a phrase that is hard for me to understand. "Italians will swarm where the blacks work contentedly" is what I have reference to. Personally I have never been a booster of the Italians, as many know; for altho I have had a lot of fine stock of this race, yet rarely do we have the uniformly populous colonies as when we had more of our favorites, the Carniolans. I have had lots of what would be called "blacks" too, I suppose; and if there is anything I have praised the Italians for above other things it is that they so rarely swarm when producing extracted honey, as compared with the Carniolans or black bees. I gave up trying to solve the question why Allen Latham finds just the reverse to be true in his case, and once more we shall have to call to our help that old and much abused word "locality."

RESULT OF THE HARVEST NOW KNOWN.

At this date full results of the season are now known to all. The crop has been above the average for a white-honey yield, practically all of the surplus coming from clover. Basswood seems to have been a failure all over the Province and in Quebec as well, by what I have been able to learn. The demand has been exceptionally keen, and prices have been fair. Of course, as usual in a good season, some beekeepers got nervous and sacrificed their crop, and wholesalers were ready to pick up such consignments. Personally, all our honey was sold in early September, the local demand this year taking thousands where hundreds filled the orders last year.

Owing to continued drouth, buckwheat is almost a total failure in most sections. To

show what one good rain will do I might say that of the four yards here in York Co. only one stored any buckwheat to amount to anything—about 40 pounds per colony. That yard had a good rain during buckwheat bloom. At home, just 7 miles away from this yard, no rain fell, and no buckwheat honey was stored.

NO FEAR FROM BUCKWHEAT HONEY.

Mr. A. T. Brown, in September *Beekeeper*, says of buckwheat stores for winter, that they are "unsuitable as a food for bees," and to back up this sweeping assertion he stated that in the fall of 1914 he extracted his buckwheat honey and fed it back to the bees, and, as a result, lost 37.5 per cent of his apiary. One swallow does not make a summer, and I imagine I see many old-time beekeepers in the buckwheat regions smile.

Some of the best wintering we have ever had has been on buckwheat stores; and if the crop is gathered during hot weather in August, and no honey-dew is gathered along with it, buckwheat honey is fine for wintering. Mr. Brown extracted the honey and fed it back — a bad practice, generally speaking, as there is risk of spreading brood diseases unless honey is boiled, and then the bees would surely die. If fed as it comes from the extractor, as a rule much of it would granulate in the comb, and bad wintering would follow. While I have done little feeding of honey in the fall, whenever such work was done the honey was diluted with warm water to the proportion of two parts of honey to one of water.

While I prefer good clover honey or sugar syrup from best granulated sugar to any other kind of winter stores, unquestionably I would not worry if I knew all colonies had full combs of well-ripened buckwheat honey. This year the bees go into winter quarters with the most clover honey in the brood-nests that we have ever experienced; so, all other things being normal, good wintering may be looked for.

ONE TIME WHEN DRAWN COMBS ARE INDISPENSABLE.

Often the question is asked as to what drawn combs are worth. This year I have been figuring that their value is hard to reckon under certain conditions. On Monday, July 3, I was suddenly taken ill, and for six days I could hardly crawl around—

in fact, the doctor said I should go to bed. As I was all alone, my son having gone to the north yard where swarming was bad, with four yards of bees to look after right in the rush of the honey-flow, surely things looked rather blue. Two yards are four miles from home, and one eight miles away; but with the help of the auto, distance did not count much. I could not even lift up full supers to place an empty one underneath, so I simply piled on the empty supers as needed in so far as I was able to do so. Combs that have not been used since 1913 were called into use, and today the hives are piled higher than my head, in many cases. Swarming was headed off in most cases so far, but I suppose many will soon go to pieces in spite of all I can do. I am getting back to health again; but a week's knock-out right in the middle of the flow makes quite a handicap to overcome.

But the question I had in mind was, "How much were all those drawn combs worth to me under the circumstances outlined?" While I do not contend that I shall get as much honey as would have been the case if we had been able to extract sooner, yet what would have happened if I had been short of combs? No doubt the greater part of the colonies would have swarmed and left, for I in my poor health at the time could not think of going thru the hives, let alone do any extracting; and as for getting help, any beekeeper knows the impossibility of getting skilled help in our line. As it is, hardly any colonies have yet swarmed, and there is a nice pile of honey tiered up in the four yards. Actually, I think that each set of drawn combs was this year worth at least \$4.00 or more to me. Am I placing the value too high?

* * *

WEEKLY EXAMINATIONS TOO MUCH FOR ME.

The editorial on page 775, Sept. 1, regarding the matter of diagnosing colonies without lifting out frames or taking off supers every week is interesting to me because that is a common practice with us during the honey season. Some time ago friend Holtermann, in advocating a weekly examination of every colony during the honey season, asked me what I would suggest to do away with this weekly grind (he did not call it by that name), when I stated that, if I had to make an examination of every colony every week I would go out of the business. While I have not the time to tell what I would do, or, rather, would *not* do, I will say that, during the season just passed, I was entirely alone for four weeks

following July 1, and had four yards to look after. At the close of the season I had help to extract, but not a helper was in sight so far as keeping back swarming, putting on supers, etc., was concerned. After careful examination I found that about half a dozen swarms had left the yards. That was easy; and, aside from the fact that it would have been a physical impossibility for me to lift off all supers and examine every colony each week, the work would never have been paid for even if it had been performed. No; I repeat again that, while weekly examinations sound all right, and look well on paper, if one is alone for a season and has a lot of bees to look after, he will soon find that something else must be depended upon to help him out. What that is, will have to be worked out by each one to suit his own locality, peculiar management, etc.

While discussing this question I want to make the bold unorthodox assertion that great large entrances do not materially, if at all, help to keep down swarming. As stated on many previous occasions, by reason of buying bees in all sorts of hives, and running them for a number of years, I have had abundant proof to satisfy myself on this question. Possibly very few beekeepers have less swarming than we do; and when honey is going we generally get our share with the rest, and assuredly large entrances do not contribute to our low average in swarming, as we have very few entrances indeed that would be called *large* by the average beekeeper. This year one large powerful colony was left in a packing-case all summer, and by actual measurement I find their entrance was 2 inches long by $\frac{3}{4}$ deep. Not because of the very small entrance, but in spite of it, I suppose, that colony about headed the yard, stored over 300 pounds of clover honey, and never offered to swarm. The strain of bees had nothing to do with the non-swarming, for last season that same colony in a single-walled hive swarmed, and there were only three or four swarms all told, that season in that apiary. The secret of the colony storing so heavy and not swarming lies in the fact that the bees entered the supers early in the season, and at all times they had abundant super room, over 150 pounds of honey being on the hive at the last extracting.

Before some one calls me to account for backing up the use of such a ridiculously small entrance as I have mentioned, let me say that I admit that it was too small, but at the same time I consider the very large entrance, as advocated by many, to be just as ridiculous in the other extreme.

BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.



A field meet was held in Riverside recently. Those attending report a very successful meeting. Another will be held in Redlands, Oct. 7.

The blue-curl season is now at its height (Sept. 11); and while it is not considered as being a surplus-producing plant, yet there is no wild flora that is more valuable as a stimulating source. In the very late season, after the bees in many localities have been practically idle for several weeks, they are given sufficient stores from the source to encourage late breeding.

A writer concludes that the efficiency of the Italians in keeping down disease lies in the fact that they are better house-keepers. Good house-keepers have always been in demand. The experience of finding out who are the good house-keepers has caused many an hour of regret.

Mr. J. E. Crane, page 722, Aug. 15, advances the theory that the climate of California affects the bees as it does people, giving this as the reason that the bees are able to fly a greater distance here than in Florida. The theory seems to be perfect, but I am a little skeptical as to the realities of the case. However, I am not ready to say that Brother Crane has not advanced the proper idea as to the cause, but do not see exactly how it is to be proved.

When a small boy, and just becoming interested in the bee business, I was not only eager to learn, but I was about as gullible a mortal as could be found. There was an old Kentucky gentleman in the neighborhood who told me many remarkable things about his experiences with bees, one of which was that he once had a colony in a starving condition that he saved by boiling a piece of chicken very tender and slipping it into the hive where the bees had access, and, strange to say, the bees lived thru the winter (I think the chicken had nothing to do with it, however).

Howard L. Rann, a humorist, has recently tackled the bee. Mr. Rann is contributing some funny thoughts to the daily pa-

pers, and, like the great majority of our population, he seems to have very little accurate knowledge of the habits of the bee, and incidentally throws himself in a very ridiculous light by venturing some comic matter on the subject. I quote: "Bees do not believe in equal suffrage. The male bee is not allowed to look or dress different from any other bee, and is the most henpecked individual in existence. It is a sad sight to see a swarm of masculine bees trooping forth to work in the morning, bossed by a queen-bee who probably does not know how to vote the Australian ballot." To the average person this is undoubtedly very witty; but to one who has some knowledge of the habits of the bee, it certainly puts Mr. Rann in a ridiculous light.

WILL THE LOCAL ORDINANCES HOLD?

Some recent decisions by our state courts lead me to the conclusion that it may be a good time for us to ponder over some of our many different county ordinances relative to bees. By the terms of a decision handed down by the third district court of appeals in Sacramento, August 10, there seems to be a case that nearly parallels our county ordinances. The substance of the decision was that the state fish and game laws cannot be circumscribed or otherwise restricted by local enactment. A similar decision was given some months ago relative to the speed laws governing automobiles in municipal limits, in which it was held that the state law was superior to the city ordinances in regulating speed, thus practically annulling all city ordinances on the subject. In the first case it seems that the Board of Supervisors of Humboldt County, acting upon a clause in the county government, making further restrictions on the game laws of the state, had precipitated the matter into the courts where it was held that the state laws were the recognized game laws, thus ignoring the county ordinance.

I have expressed my opinion at various times regarding the probable results if some of these restrictive ordinances should be questioned in the courts. The decisions mentioned above seem to verify my conclusions. There is little doubt that arbitrary and restrictive bee ordinances such as some of our counties possess, and which come under the police powers of the state, would suffer under a decision of the courts.

BEEKEEPING AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado



THE FALL FLOW.

Bees have gathered some honey in September this year; but the man who has not provided extracting-combs for bees has secured little of it, as comb-honey supers are not the thing for such a slow flow.

The quality of winter stores is good, and wintering promises to be good.

THE ALFALFA WEEVIL.

The Government bulletin on the "Control of the Alfalfa Weevil" states that the infested area is widening about ten miles per year. There seems to be no way of preventing the spread of this pest, so we shall all doubtless suffer sooner or later.

The center of infection is in Utah and has extended into Idaho, but has not reached Colorado—that is, it has not been officially reported to have reached Colorado. A western-slope farmer told me he had a piece of alfalfa infested by the weevil; but if so, the authorities had not yet found it out.

BOULDER COUNTY FAIR EXHIBIT.

The Apiary Department of the Boulder County Fair was well taken care of this year. Mr. D. W. Spangler was the able superintendent and Mr. J. C. Aikin, of Loveland, judged the exhibits. Entries were made in nearly all classes. The exhibit of fancy comb honey was the best the writer has seen anywhere. First premium for the best six cases of fancy comb honey was won by Milton Cantonwine, of Longmont, and second premium by A. J. McCarty, of Longmont. Mr. Seph Francis, of Longmont, got first premium for best and largest exhibit of apiary products. A feature of the exhibits was the use of honey in canning and cooking. The educational value of this is not small.

Thursday, September 7, Seph Francis and W. H. Foster, of Boulder, gave live-bee demonstrations before interested crowds.

EUROPEAN FOUL BROOD A RESPECTER OF PERSONS.

European foul brood plays favorites with beekeepers more than does American foul brood. European foul brood is a respecter of persons, and American foul brood is not. If you are an alert, up-to-date beekeeper, keeping all colonies strong, and headed by young queens of resistant stock, you can be reasonably free to laugh at European

foul brood, altho it rages all around you. You will need to be a queen-breeder, and also to be prepared to feed your colonies, should a lull of sufficient importance occur in the flow. It seems no strain of bees is absolutely immune unless you give them a chance, and a good chance too.

It behooves every beekeeper, whether he is ten miles or five hundred from apiaries infected with European foul brood, to secure resistant stock of Italians, and keep young vigorous queens of this stock in his hives. It will pay in honey crops, and be insurance against European foul brood also.

One interesting fact concerning the spread of European foul brood is that the diseased district in Colorado has moved, *so far, only* to the eastward. The area of diseased apiaries has moved eastward three or four miles, and, so far as known, has not spread westward at all. The bees fly in an eastward direction in the spring, as the wild flowers are more profuse on the hills to the east in this locality. The direction of the prevailing wind is eastward in the daytime and westward at night in this diseased locality. What effect may the wind have on the spread of the disease? As the bees are a fair grade of Italians, European foul brood has spread very slowly in the last two years, and it should be possible to prevent its further spread and stamp it out. We shall see what the result will be.

This disease, we think, is being brought under control in Colorado, and it may be possible to prevent its spread to other parts of the state. The infected apiaries are still confined to an area not more than five miles in diameter. The beekeepers have purchased hundreds of queens of golden stock, and are getting results. The majority of the beemen are learning to handle the disease and will be able in the future to secure crops of honey, even tho some disease may be present.

We have no success to report from caging queens. Removing the brood and requeening seems to have good results. Keeping colonies strong and uniting weak ones for this purpose is essential. It is probably not necessary to destroy combs; but those badly infected had better be destroyed. It is much cheaper to practice a few short-cut methods than keep the disease always present, even if it is under control. It is certainly a pleasure to see beekeepers get control of the disease by introducing new stock of queens and improved apiary practices.

CONVERSATIONS WITH DOOLITTLE

At Borodino, New York



SHIPPING COMB HONEY.

"The season for shipping comb honey is here, and I am lucky enough to have some to ship to a distant market. But how to fix it for safe shipment is something I do not feel competent to do. How

is this best done?"

I used to ship my comb honey by canal in my earlier years of shipping to New York, and found this much better than sending by express, as nearly all comb honey was sent in the 70's. Boats on the Erie canal would stop at a place about 15 miles distant and take a few thousand pounds of extra freight on top of their loads of grain if they were notified beforehand. By having the honey there on the arrival of the boat my whole crop would be put on in an hour or so, and I could see that it was carefully handled and put on top of the leveled grain, while the captain would see to its careful handling at its destination.

Next to the boat comes freight. At first sight it would seem that express would be safer than freight, on account of the heavy shocks freight-cars are liable to receive, and it was with much trembling that I loaded my first freight-car. Wool-sacks were filled with straw and put in each end of the car to give a cushioning effect instead of a thump when the cars were coupled. Much to my satisfaction this carload went thru in perfect shape, this giving me great confidence for the future.

Since then I have had some small breakage, but I still adhere to that way of shipment where the canal boat cannot be used from the start to destination.

Much can be done by the beekeeper to avert the matter of broken comb honey. The first step is to produce the article in the best shape by having the combs built solid to all four sides of the section; and to do this to a certainty it is best to use full sheets of very thin section foundation, fastening it in good and true with a good foundation fastener. Comb honey in which the combs are attached only partially to the sides and bottom of the section should be sold in the home market rather than shipped long distances. Then the combs should be built evenly in the sections so that no "fat" or "lean" combs will have to be expensed with to keep the nice cappings from touching each other. The only sure way to secure such combs is to use separators, then the cappings of the honey will not scrape off in shipping.

Care should be used in packing, to see that the honey is all of a thick ripe grade, and all sealed, in perfect condition and strongly built. If there is any unfit to ship long distances, use it at home, put it back in the hive for completion, or dispose of it as "chunk" honey. Don't allow it to go with the long-distance honey, for damaged honey means low prices for all, and the ultimate harm to the market for others. To gain the best results in shipping comb honey it should be well cured; and to gain this end it should be kept in a warm, dry, well-ventilated room for from three to five weeks. The temperature nearest 85 to 90 degrees will do the best curing. Five weeks of such curing will cause any honey in the few unsealed cells that may be next the section to become so thick that it will not run, even tho the section is laid down flat or handled at any angle. When thus ripened it will not get thin enough to run before it reaches the desired destination, even tho the weather while it is in transit be damp, foggy, or rainy. The merchant to whom it is consigned should be instructed to keep the honey on its arrival in such a place as it was during the five weeks previous to shipment, in order that it may reach the consumer in a shape that will lead him to enlarge his purchases of the product as the years go by.

Shipping-crates should be made to hold eight twenty-section cases to insure the most care in handling by freight men. The practice of shipping comb honey in single 20 to 24 section cases, that can be easily thrown about, is not to be tolerated, especially in small or less than carload shipments. By making the crates large enough so that they will require two men to handle them—say those that will hold from 150 to 200 pounds gross weight—such will not be thrown about, but picked up and set down more carefully. If handles are furnished they will be used.

If in addition to the glass that shows the nice comb in the outside cases, the crate is marked with a request to handle with care; placing it crosswise when loaded on a wagon, and lengthwise in the car, the shipper will have little to fear in regard to its arrival at its destination. Say a kind word to the freight agent or the one under him. Give each a section of honey when you pass your shipment on, and it will pay big in dollars and cents, to say nothing of the satisfaction such a course will bring to you.

GENERAL CORRESPONDENCE

SACBROOD MORE DISASTROUS TO COLONIES THAN HAS BEEN GENERALLY SUPPOSED

BY BURTON N. GATES
Associate Professor of Beekeeping, Massachusetts Agricultural College, Amherst.

Beekeepers are inclined to disregard the presence of sacbrood in their colonies. It is often imperfectly understood that this disease may be disastrous in an apiary. If it occurs in even a slight form, it is depleting. Accurate figures of the damage which it can cause are difficult to obtain. Its virulence apparently differs in different seasons, apiaries, and colonies. The strain of bees apparently has much to do with the evident symptoms of the disease. Not infrequently a beekeeper says that his bees are not subject to sacbrood, or that if sacbrood occurs it is soon cleaned out. Occasionally colonies are found in which disease is not readily suppressed, either thru the efforts of the beekeeper or by the bees themselves. Sometimes beekeepers treat or shake to rid the colony of sacbrood, the same as they would a colony diseased with European foul brood or American foul brood. It is not, however, usually necessary to resort to these drastic measures. The introduction of a more vigorous strain of bees—that is, the introduction of a queen of virule type, will usually do away with the disorder.

During the season of 1915 several severe cases of sacbrood came under the observation of the writer, in which the infection was exceptionally pronounced. In fact, a careless glance at the combs suggested the presence of American foul brood. The apiaries in which this infection was found have had sacbrood for some years, varying from time to time in intensity. General observations around Massachusetts indicate that such conditions are not infrequent. With proper measures, however, the disease can be obliterated.

It is not the purpose of this discussion to consider the nature, cause, or treatment of the disorder, but more especially to give a graphic account of extreme cases of sacbrood. For concreteness, three cases are presented.

Case 1, count made by the writer June 24, 1915, Newburyport, Mass. A colony which was obviously badly infected was selected. At random, a block of brood on one of the combs was marked off, 18 cells by 25 cells, making in all a group of 450 cells. By count of these cells, there were 125 which contained either sacbrood scales

or larvæ. There were, besides, a considerable number of empty cells, or cells with eggs among irregularly arranged healthy brood in all stages. Thus about 27+ per cent of the brood was infected with sacbrood.

Case 2, count made by the writer June 24, 1915, Newburyport, Mass. The comb used in Case 1 was reversed, and a block of cells 13 by 45 was marked off, containing 585 cells. The block of cells was selected at random. Of this group of cells 50+ cells were sacbrood or 8+ per cent.

Case 3, count made by the writer June 29, 1915, Rowley, Mass. A typical, bad case of infection was found. From the center of the brood-nest was removed a comb upon which was marked off a group of 800 cells, 40 cells in a row and 20 rows. Counts were made as follows:

Total number of cells..... 800
Number of empty cells or cells with honey 98

Balance { cells of healthy larvae..330
 { cells of sacbrood.....372 702
Per cent of infection, 53.

The 20 rows of 40 cells each extended from the top to the bottom of the frame, thus affording a complete section of the brood-nest. In order to furnish a more complete comparison the data for each row of cells are tabulated below:

Row	Cells of sacbrood	
1	17	Top of frame.
2	20	
3	14	
4	24	
5	30	
6	21	
7	24	
8	21	
9	18	
10	18	
11	21	
12	29	
13	20	
14	20	
15	15	
16	16	
17	19	
18	8	
19	9	
20	8	Bottom of frame
		372

Cases 1 and 2 show how the disease apparently varies within a given colony and within a single comb; but the 8-per-cent infection presented, even to the untrained eye, the appearance of marked infection. Thus it is presumable that the majority of colonies which show only a few cells of the disease are of a low-per-cent infection.

It is somewhat surprising, however, to most beekeepers to learn that 30-50 per cent of their developing bees are dying of sacbrood. They realize that the disease is present, but they rely upon the energies of their colonies to clean the disease out, knowing that from time to time apparently this occurs. These figures, which probably typify conditions elsewhere in the country

other than in Massachusetts, should stimulate the beekeepers to select stock which will not tolerate the presence of sacbrood. A 1-per-cent infection should not exist in any colony. To breed from such a colony may mean the perpetuation of the weakness and inclination of this race of bees to the infection.

The writer would be glad to describe to the beekeepers the method of making these counts, if such details are desired. A group of several hundred cells can be accurately compared by simple means within relatively few minutes. It may be that inspectors elsewhere in the country can procure comparative data, and that in the future further information will be available.

WHAT QUEENS SHALL WE BREED FROM? AND SOMETHING ABOUT THE DRONE PROBLEM

BY DR. C. C. MILLER

With all my heart I believe that every beekeeper, beginner or veteran, should make it his constant business to improve his stock. He may get one or more queens as a start, wherever he thinks he can get anything better than the stock he already has, but that's only a beginning. His steady job, for the rest of his life as a beekeeper, is to see that each year his bees shall be at least a little better than they were the year before.

To do this we must keep close tab on each colony, putting down in black and white its performance. Without neglecting the matter of temper and other points, the chief thing to be considered is the amount of honey stored. No guesswork about it; but each time a pound of honey is taken from any colony, put it down. For many a year past I can turn to my record-book and tell you just how many sections each colony gave. A little trouble—yes, but I couldn't get along without it.

Having, then, the standing of each queen, he can rear his young queens from one or more of the best. I do not mean that he shall make a wholesale job of requeening each colony each year. A colony that is doing as well as the average, or better, may well be left to itself, even requeening itself at its own will. But in the usual course it will sometimes happen that a colony will go queenless, and then it is a nice thing to go to a nucleus and get for it a young laying queen of best stock. It will be well, also, to replace with a queen of better stock any queen whose colony falls below the average in its performance.

In deciding what queen or queens shall be used to breed from, two courses are open.

One claims that it is not best to use for a breeder a queen whose colony stores an amount away above the average, such a queen being a sport, or freak, whose royal progeny will vary widely in characteristics; but, instead, breed from stock a little above the average, thus securing more uniform results, and gradually but surely raising the standard. Another claims that, by constantly breeding from that queen whose colony stores the most, the habit of heavy storing will in time become a fixed characteristic.

I don't know which is the better way; but I do know that by breeding constantly from the queens which make the highest scores, freaks, if you so choose to call them, I have very materially increased my average per colony.

You can do the same.

What about drones? One cannot control the mating of a queen; but one can control the rearing of drones in his own apiary, and thus increase the chances a young queen shall have for meeting a drone of best stock. In carrying this out in practice, here is the plan I followed for many a year: I selected half a dozen or so of the queens standing at the head of the list for heavy yields. The very best of these I chose as the one from which to rear virgins; the rest were chosen as drone-breeders; allowed a considerable amount of drone comb; and drones were suppressed in all other colonies in the apiary.

I think most beekeepers would endorse this course. I know that some of the best of them do endorse it. But I am sure it is wrong in principle. To make clear what

I feel sure is the right way, I think I cannot do better than to close by quoting from an article I wrote lately for *The American Bee Journal*, as follows:

"A certain colony in the apiary, in an average season, yields a surplus of 100 pounds, and we call the queen of that colony a 100-pound queen. Of course, it is the workers that do the storing, and a worker of that colony depends for her character, not only upon her mother, but also upon the drone with which her mother mated. In other words, that worker is the daughter of her mother and also of her father, her father being the drone with which her mother mated. While it is true that the worker is the daughter of her mother and of the drone with which her mother mated, it is not true that the drone is the son of his mother and of the drone with which his mother mated. As the drone proceeds from an unimpregnated egg, he is not at all influenced by the drone with which his mother mated. He is the son of his mother alone; or if you insist that he must have a father, then he is the son of his grandfather, the drone with which his grandmother mated. He is of the same blood as his mother was, without any reference to her mating; that is, his blood is the product of the combined blood of his grandmother and the drone with which she mated.

"As his grandmother gets her rating from that combined blood, whether she be a 50-pound queen, a 100-pound queen, or whatever she may be, the drone will have pre-

cisely the same rating as his grandmother on his mother's side. If his grandmother is a 50-pound queen, he is a 50-pound drone. His mother may be a 25-pound queen, a 75-pound, or something else. That doesn't make any difference; he is a 50-pound drone because his grandmother was a 50-pound queen.

"Now let us see how it will work out to have half a dozen of the best queens, using one for rearing virgins and the others for drones. Suppose they are all 150-pound queens. Any one of them is all right for rearing queens, but how about drones? One of them may be the product of a 200-pound queen and a 100-pound drone, and her drones will be all right. Another may be the product of a 100-pound queen and a 200-pound drone, and drones will not answer. Just remember that, in considering the value of a drone, we are not to consider his mother but his grandmother.

"With this view of the case we have the comfort of knowing that the problem of securing the best drones is made immensely simpler and easier. For if all our queens are reared from our best stock, the matter of drones takes care of itself automatically. No matter if a queen has mated with the poorest scrub stock of a neighbor, her drones are just as good as any, for they come from the same grandmother.

"So, rear queens persistently from best stock, and suffer no drone that has not a respectable grandmother."

Marengo, Ill.

MID-WINTER BREEDING

BY J. E. HAND

Occasionally a progressive beekeeper becomes quite enthused about winter breeding in cellars when stimulated by feeding with hard candy. It is well to understand in this connection that a moderate amount of voluntary breeding in winter is a purely normal function; but feeding to stimulate excessive winter breeding in cellars is abnormal, because it is always accompanied by an abnormally high temperature, excessive activity, and excessive consumption of carbonaceous food—a combination that, without frequent cleansing flights and free access to water, is likely to culminate in exhausted vitality, distended abdomens, dysentery, and death. While this calamity may, perhaps, be averted by carrying them out and giving them a mid-winter flight, in my opinion the labor involved is in excess of the advantages gained, aside from the risk incurred.

Winter is a season of rest and comparative inactivity of bees; therefore any condition of abnormality that causes excessive activity of bees in winter should be regarded as a possible and probable calamity. An experienced beekeeper can manipulate bees with impunity during a warm spell in winter; but a wise beekeeper will provide ample food and adequate protection in October, and let his bees severely alone during winter and early spring. In my opinion, winter meddling and spring tinkering, erroneously called "stimulation," is not a component principle of a competent method nor a necessary qualification of a thoroly competent beekeeper.

I would not convey the idea that winter breeding is an undesirable function, except in cellar wintering, for it has been ascertained beyond a doubt that a moderate amount of normal voluntary winter breed-

ing may be practiced with impunity outdoors in the latitude of northern Ohio, as a purely normal function without any attention whatever, except that given in October preceding. Here is my recipe for perfect outdoor wintering accompanied with voluntary winter breeding. 1. A 14-frame colony in October; 2. Contract it with a thin-wall eight-frame inner chamber 12 inches deep, on the convertible plan where-in the hive proper serves as a winter case; 3. Provide adequate internal insulation, 3 inches on sides and 7 on top, with none on the front end; 4. Provide 40 lbs. of honey or sugar syrup.

A colony in this ideal condition in my lo-

cation will not draw together in a light cluster except as suspended in the deep space under the frames, except possibly in zero weather, and will rear sufficient brood to make them stronger in April than in November preceding. The component principles of successful wintering are extreme contraction, adequate insulation, an abundance of bees, and 40 lbs. of stores. The convertible method is a synonym for economy of equipment and efficiency of service.

Birmingham, Ohio.

[Mr. Hand's 14-frame convertible hive is described and illustrated on page 276, April 1.—Ed.]

THE TWO-COLONY WINTER CASE

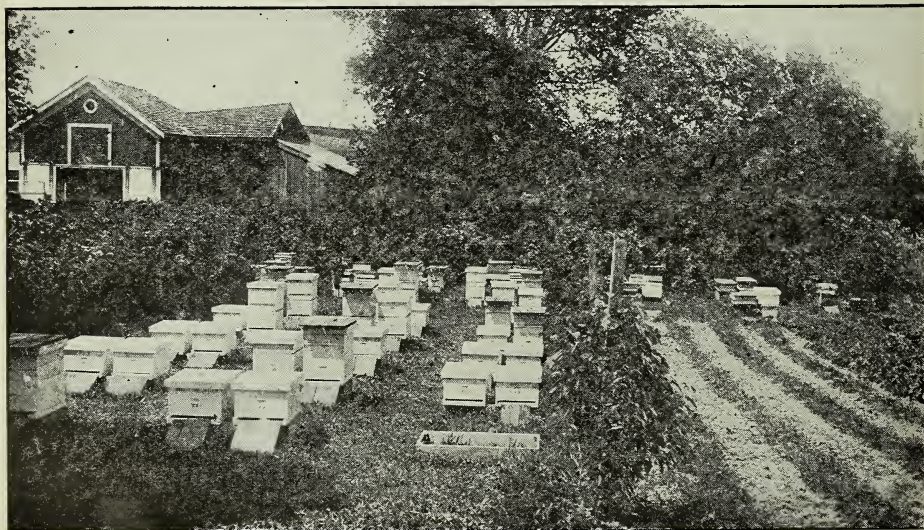
BY W. S. WIGGINS

I have read a good deal about winter cases for one, two, four, or more colonies, but have come to the conclusion that for me, at least, the two-colony case is the best.

I have always had some objection to the four-colony case in that it necessitates moving the hives to place the bottom of the case in position, and two of the hives have to face in an opposite direction from the others; whereas in my estimation they should all be facing south; moreover, it takes two men to handle such large cases. If all four hives could face the same way or the bees could be moved to the four-colony case in the fall without confusion then I would be in favor of the four-colony case. My

colonies, however, all face south and are packed on the summer stand without moving in any way, with the exception of a few old eight-frame colonies which are packed in long eight-colony cases as shown in one of the pictures.

I have seen colonies winter without any protection whatever, and come thru in good condition. I have seen colonies with a few corn-stalks thrown over them, or with a few boards loosely placed around the hives and packed with straw, come thru in good condition with apparently no greater loss than those wintered in cellars or in carefully built cases. Is it necessary to have our cases built so warm? My two-colony cases



A late summer view of a portion of W. S. Wiggins' apiary at Muir, Mich.



The same apiary in winter quarters, showing the two-colony cases. This also shows three eight-colony cases in which are housed the eight-frame hives.

contain no bottom whatever, and in this way I figure that two of the cases can be built for about the same money that one of the four-hive cases can. There is no disturbance to the bees when the cases are put on in the fall. One man can set them up, place them over the hives, and put in the packing without any help.

The cases are constructed to allow four inches of packing material on the back and two ends, and in front a space equal to the distance the bottom-board extends beyond the hive, which on my hives is only two inches. The cases extend about eight inches above the hive. This space I pack tightly with good straw or leaves, and over all I place the roof, which has a good water-tight covering of composition-paper roofing. These roofs have a two-inch strip all around the sides which come down over the case and prevent the water from working back into the case and wetting the straw. The cases extend about to the ground and the packing goes clear to the ground as tightly as possible, making the case as warm as tho it contained a bottom-board.

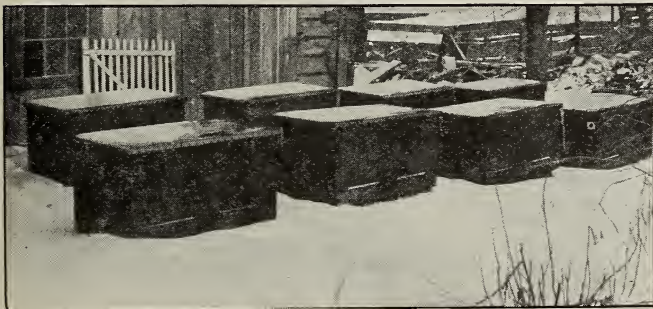
I first place a queen-excluding board over

the brood-chamber, then a burlap blanket, then a super filled with planer-shavings, and the hive is ready to pack. I use no sealed covers over the brood-chamber. Old beemen with whom I have talked advise against this. Why do you, Mr. Editor, advise this, and still advocate ventilation, which they certainly do not get with a sealed cover? [See Editorial.—Ed.]

It will be noted that the case does not quite touch the ground, and some may wonder how it is held in place. To begin with, a strip is placed over the entrance-boards. I use the wide entrance on the bottom-board for winter, and lay the board flat upon it. This I believe gives ventilation enough, and the board prevents the packing from getting into the entrance. Then I nail two blocks on the inside of the front of the case just high enough so that, when these blocks rest on top of the board over the entrance, the case will not quite touch the ground. Then on the inside of the back I nail another block directly in the middle of the long way of the case and about ten inches from the top. Then I take a two-inch strip, notch it in one end so that it will rest

over the edge of the hive-stand directly between the two hives in back, and cut it to such a length that, when the back of the packing-case is raised and the other end of this stick is placed under the block on the inside of the back of the case, it will make the case about level.

Muir, Mich.



The two-colony cases permit all the hives to face the south.

THE REASONS FOR THE COLORS OF THE FLOWER

BY JOHN H. LOVELL

If you dip a red flower, as a rose, in a weak alkaline solution, as a cup of water to which a little ammonia has been added, it will turn blue; but if you dip it again in a weak acid it will at once recover its original red hue. A blue flower dipped in a weak acid becomes red, but becomes blue again in weak ammonia. In a recent number of the *Literary Digest* there was published an extract describing the color changes of red and blue flowers, and their relation to an acid or alkaline plant sap.

Red and blue flowers owe their colors to a large group of pigments dissolved in the cell-sap, and called collectively anthocyan. Yellow and green pigments are usually in solid granules. The red and blue pigments are believed by chemists to be derived from yellow pigments. If the sap of leaves or flowers is acid, then any anthocyan present is red-colored. There are families and genera which have the sap so strongly acid that, no matter under what conditions they grow, they never produce any blue flowers. There are no blue roses; and who ever saw a blue pink? In the great orchis family, which contains some 6000 species, there is only one blue flower, *Vanda coerulea*, of India.

While red flowers are comparatively rare (for there are only about 257 in all north-eastern America, red coloration is very common in leaves and stems, especially in spring and fall. As to its use, if it has any, there have been many opinions; but the most acceptable is that of Stahl who thinks it aids the plant by absorbing heat. The production of red pigment is increased by three factors—a low temperature, a bright light, and the presence of sugar in the plant tissues. In the Alps the leaves of plants are much oftener red than in the lowlands, because the night temperature is lower. In the intense light of alpine summits white lowland flowers sometimes become red-flowered. But it is to the influence of sugar that the most interest attaches.

A chemist by the name of Overton cultivated an aquatic plant (*Hydrocharis*) in a solution of water and sugar, and in a few days dark-red coloring appeared, especially in the new leaves. Other plants grown in pure water showed no red color. The cut stems of lilies and other land plants in a weak sugar solution soon developed red color; while the leaves of other stems in clear water remained green. He further found that low temperature, but above freezing,

and bright light, promoted the formation of red pigment. In arctic regions Wulff has observed that the leaves of plants are often rich in sugar, and red-colored. Red autumnal leaves are also said to contain more sugar than when they were green. These and many other experiments appear to prove that there is a relationship between anthocyan and sugar.

Since plants which have a rich sugar content have the cell-sap colored with anthocyan, there is certainly no improbability that the nectar secreted by such plants may contain more pigment, or be darker colored, than that secreted by plants with little or no red or blue pigments. That is, there may be a relation between the color of the honey and the amount of anthocyan a plant contains, but it must be admitted that we know very little about the matter. An acid or an alkaline soil has apparently very little effect on floral colors, for both red and blue flowers grow on both kinds of soil. Still, Kerner tells us that in the limestone Alps several flowers are blue or yellow which elsewhere have different colors. There are also other observations, according to which the colors of flowers have been changed by chemicals, as iron or arsenic, in the soil. But however it may be with the color of nectar, its secretion is certainly strongly influenced by soil and climate, or why should alfalfa and many other plants yield freely in one region and not at all in another?

Let us in conclusion briefly consider the effect of an alkaline sap on flower colors. In many flowers the cell-sap is only feebly acid, or neutral, or alkaline; for instance, in the forget-me-not and common borage the sap is at first acid and the flowers open red, but a little later change to blue as the sap becomes alkaline. If the sap is neutral the pigment may be violet-colored, or it may be invisible, which explains why some flowers suddenly lose their color; but in this latter case it may be again restored by the use of an acid. If the sap is alkaline the anthocyan turns blue; or if there is a yellow pigment present it becomes green. Sometimes one part of a flower may have acid and another part alkaline sap. A hyacinth has produced a flower-cluster with blue flowers on one side and red flowers on the other; also flowers with petals partly blue and partly red. A variety of phlox was clear blue in the morning, but gradually changed during the day to a beautiful deep rose. Red and blue cells may occur indiscriminately in the same petal, as in the

sweet-scented violet. Thus the transition from red to blue or from blue to red may often be very easily effected.

The shade of the flower depends upon the density of the coloring matter it contains. The scarlet poppy, tulip, and fire-red canna owe their colors to a mixture of yellow

grains and red cell-sap. The different pigments included under the name anthocyan are closely allied, yet they vary somewhat in composition and hue; and according as they occur alone or mixed they affect the color of flowers. A knowledge of these pigments is important to plant-breeders.

Waldoboro, Me.

HOW TO PREVENT YOUNG QUEENS FROM MISTAKING THEIR OWN ENTRANCES

BY W. D. SELLERS

The first year that I wintered my bees on this ground, the hives faced due east. The result was that many colonies clustered on the southern side, because that side was warmed by the sun's rays. The next year I changed them so that they faced southwest, and now most of the clusters are in

which I expected a virgin queen to issue to mate; and upon going there I would find no queen. I would then look next door, and there she would be lying on the bottom-board dead. So far as I know I did not lose one queen this season in this yard. The hives being 8 ft. apart, and every other one



W. D. Sellers' queen-yard, Lancaster, Pa. The hives are eight feet apart, and every other one is painted yellow.

the center, altho a little toward the front of the hive. It is true that some of the clusters went to the extreme and located on the edges past the last comb. If my piece of ground faced to the south lengthwise I would then face the hives south. I propose to erect a windbreak on the north and northwest side, as this was certainly needed last spring.

It will be noticed that every other hive is white, the others being colored with ocher or yellow. I formerly had all my hives painted one color, and much closer together. I lost many fine queens this way, I am sure, because I had often marked a hive from

a different color, the bees now have a chance at 16 feet to make their goal.

My shop and honey-house faces east. During the middle of the day in the winter the sun shines thru the windows and makes the room comfortable. Facing south would be a better position, as at midday, when the sun is the hottest, it will hit the largest possible part of the shop and leave the smallest part or end to the cold northwest wind. The shop is shaded during the summer. A shop that is in a position to receive the sun's rays in the winter, and that is protected by shade in the summer, is ideal.

Lancaster, Pa.

DIVISION-BOARDS NECESSARY ONLY WHEN WINTERING A NUCLEUS

BY TARLTON-RAYMENT

The recent advocacy of division-boards in connection with the eight and ten frame hives evoked a considerable discussion in *GLEANINGS*. Some of the writers went so far as to recommend altering the dimensions of the standard bodies to accommodate better the fixtures.

From our point of view this is a remarkable contention, because the only time we can utilize any style of division-board or "dummy" is when packing a weak colony in autumn. Even that contingency is so rarely encountered with the eight-frame hive under our system of management that the total absence of the division-boards would entail but little or no inconvenience. But to suggest varying the hive measurements simply to permit the use of what, in the opinion of many experienced apiarists, is a superfluous piece of wood—oh dear! no—not under any circumstances.

Some seventeen years ago we made our first hive. We, as the merest tyros, had just previously been conducted over a neat little apiary of eight-frame Langstroth hives fitted with beeway sections. Their obvious convenience, together with the snowy capings, made a deep and lasting impression.

At that time division-boards were not in our vocabulary; but we feel pretty certain that the model apiary was certainly not bothered with them. However, returning to our home-made hive, in the intrepid manner of the inexperienced we were convinced that it was altogether wrong to make the brood-frames $9\frac{1}{8}$ inches deep and the honey-sections only $4\frac{1}{4}$.

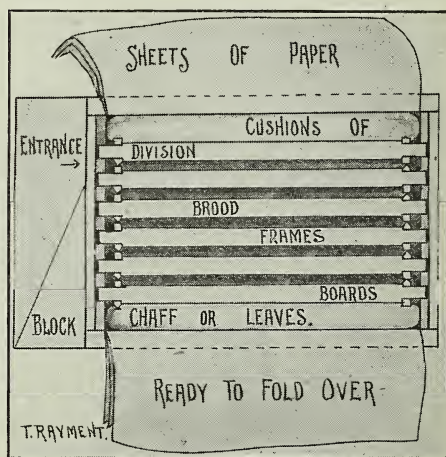
According to our reasoning, which, unfortunately, was logical, but opposed to the requirements of the bee, it should have been the other way about—honey receptacles $9\frac{1}{8}$ and brood $4\frac{1}{4}$. "Why! look what a lot more honey would be stored!" So we constructed our first and only home-made hive on those ill-based principles. In our ignorance we unconsciously invented the shallow brood-frame. The bees did not settle down to work, but deserted their home, which catastrophe led us to seek further information.

A course of study enlightened us, and proved the principles enunciated by Langstroth to be soundly based. We have been taught by sheer necessity one or two additional facts about the fitments of the hive since that time; but the use of the division-board is not yet acquired.

The first consignment of hives we ordered was machine-made eight-frame size. Each

hive was furnished with a division-board $\frac{3}{8}$ inch thick. We tried faithfully to handle them at the start, because all the text-books urged their use; but we were compelled finally to cast them aside as worthless. The hives were more convenient without them.

For eight or ten years we never handled a dummy of any description, altho we depended almost entirely upon the bees for our livelihood. Then a neighbor sold out and we purchased a number of new-pattern division-boards simply a plain board one inch in thickness surrounded by a Hoffman frame. They were very heavy, did not fit our hives, and so we removed the frames and had comb built in them. You see we could discover no reasonable use for the "dummy." The eight-frame body has only



Rayment's plan of wintering a nucleus in Australia.

sufficient room for the requisite number of frames; and why anybody should desire to insert something extra is beyond our comprehension.

It has been suggested that the boards are a necessity when colonies are to be packed for winter; but our efforts are concentrated on getting such a number of bees in the hive by autumn that when the supers are at last removed the brood-chamber is so crowded with bees that some are compelled to cluster outside. Obviously, then, there is no room inside the hive for anything more.

Of course some will insist that, without the dummy, one comb at least will be bulged or misshapen; but in all our experience we have never encountered any real annoyance from this source. And division-boards cost

money, add extra weight to the hive, provide additional shelter for various pests and diseases, and, finally, entail considerable loss of time by reason of their unnecessary manipulation.

We have used hives of many types; but we long ago arrived at the conclusion that the pattern of the bees' home is but a small factor in the apiarist's success. Personally we believe that, with the man himself, lies the secret. The personal equation is the determining influence there, for all other agents or mediums are merely subsidiary to the prosperous issue.

At various periods we have used the eight, nine, and ten frame (Langstroth pattern), the Long Idea, and the Heddon or Bolton hive—these names are synonymous

in Australia—but have failed to discover where one showed preponderating excellence. They are all good hives, and, as professional apiarists, we would be content to handle bees in any one of them. We feel sure that the same average yield could be obtained notwithstanding the pattern. The hives are splendidly effective.

But, to get back to the division-board: We find them convenient only when it is desired to carry mere nuclei thru the winter in standard bodies. The method of our procedure is explained in the diagram. Of course you will know the Australian winter is not nearly as formidable as that of the states. Indeed, the double-walled chaff hive is a curiosity under the Southern Cross.

Briarolong, Gippsland, Vic., Aus.

AN EFFECTIVE ARMOR AGAINST STINGS

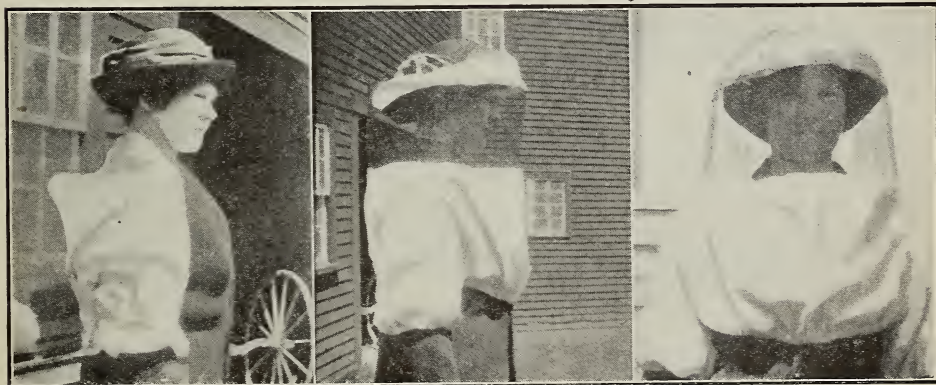
BY EMMA STROUT

Better and faster work may be accomplished among the bees when one is assured that there is no danger of stings. My veil is absolutely bee-proof, and yet it allows full freedom of the head, neck, and shoulders, regardless of the position the wearer may take, and, best of all, it can not become disarranged. The veil proper, as shown in the picture, is attached to the shirt, which

has to be tucked in around the coat collar. The elastic band around the sleeves and around the lower edge of the shirt makes it very comfortable and yet entirely bee-proof.

Kent's Hill, Maine.

[This seems to be a very good veil for one who desires absolute protection. It is somewhat similar to the one described by



A veil that gives absolute protection, and yet allows free movement of the arms.

may be slipped on over the head and instantly adjusted. Ordinarily, if desired, it can be slipped back over the head, being kept on the shoulders, but ready for instant adjustment if desired. In this way it takes much less time to put on than a veil that

Chalon Fowls, page 558, Sept. 1, 1910, altho the Fowls veil is so made that it can be detached from the shirt. Mr. D. H. Coggs shall used to wear a veil very much like the one described herewith. This was illustrated on page 1497, Dec. 1, 1907.—ED.]



Plenty of snow and cold in Montreal, Can., does not prevent John Mack from securing good crops of honey.

• WINTERING IN MONTREAL WITHOUT LOSS

BY JOHN MACK

My bees did not have a flight from November, 1915, until March 25, 1916, and for three months they were buried completely in snow.

I started in 1912 with five colonies, and have doubled every year since, and wintered outdoors in double-wall hives without any loss. I have not fed any in fall or spring, taking my surplus away early in September, and not disturbing the brood-nest until the following spring.

The honey-flow here has not varied very much since I started in 1912. My surplus last season was about 4000 lbs., one colony

giving about 283 lbs. The white clover and basswood gives us the heaviest flow, but we have a great deal of dandelion and sweet-clover honey. The market here is exceptionally good; but bottlers buy up all grades of cheap honey, and the quality is not uniform.

I have seen pictures of apiaries in the southern countries, but have not noticed very many from our northern country, and I wish to show that, while we have lots of snow and cold weather, we can produce a good quality of honey and lots of it.

Montreal, Can.

MARKETING EASY IF THE HONEY IS RIGHT

BY G. W. BERCAW

The question of marketing honey is a broad one, involving as it does the entire country from the Atlantic to the Pacific. Many suggestions have been set forth along this avenue of commerce—some good, some bad, some indifferent. Climatic conditions have some influence on the demand for honey, for I am led to believe that in cold climates more honey is used than in warmer latitudes. Honey as a food produces heat, and is more adapted for eating in cool or cold weather. Our heaviest demand comes

during cool weather or winter, as we call it here in California. My observation shows that a half more is handled and used as a food during cold weather.

I believe in advertising strictly pure honey, then supplying the honey when demanded. It should be put up in packages adapted to the trade served. Only the best and lightest should be put up. It is not necessary for the honey to be "water white." A light-orange tinge will sell just as readily. Either glass or tin containers may be used,

but I am not in favor of putting comb honey in glass cans with extracted honey. The size of package will depend upon the trade and the class of customers in general. "Strained" honey should not be advertised, and, as far as possible, the grocers should be discouraged from handling it as "strained." Have them call it "extracted," nothing else. Glass can be used for samples, also in local stores and for public exhibition and sale; but glass cannot be successfully used in parcel-post shipments.

I believe in advertising. I think it is a good plan to use little stickers on all stationery, and, if possible, to use booklets as

an aid to publicity. We have been using them for the past eight years. Honey ought to be advertised as a strictly clean sanitary article, suitable to use in any household. People must understand it that way.

We have no difficulty in selling all the honey we can handle, but it is necessary to have good fully ripened honey, not a lot of green unsealed stuff mixed with milky brood, such as has been produced in some southern California beeyards lately. Right here is the great argument in favor of queen-excluders to keep queens out of the supers.

Glendale, Cal.

SOME THEORIES ON THE COLOR VARIATION IN HONEY

BY W. I. LIVELY

There has been much discussion as to whether the same plant always produces the same article of honey in color and flavor. I have been waiting to see if some one would spring a theory in accord with my own pet ideas on the subject. Mr. M. H. Tweed, p. 988, Dec. 1, has come very near doing it.

Here in the Salt River Valley, in Arizona, alfalfa is our staple honey-plant. In fact, during a large part of the season it is the only source available. Arizona beekeepers do not spend any time discussing whether alfalfa always yields the same grade of honey in color and flavor. They know to their sorrow that it does not. It varies in different seasons, and it even varies at times during the same season. Now Mr. Tweed comes forward with the theory that this variation is caused by the difference in climate and temperature, and I suspect he is partly right at least; at any rate this is the only theory that sounds reasonable to me; and, moreover, it coincides with my own observations and experience.

Owing to a vast increase in irrigation and cultivation, our climate has changed greatly in the last few years. Summer temperatures are not so high, and there is a marked increase in atmospheric humidity. In correspondence with this change the alfalfa honey has materially lightened in color. Of late we have produced the whitest honey ever known in this section—so white and well flavored that it is comparing favorably with the northern alfalfa, and running close in competition with white clover. Where it used to range from a dark amber to a light amber, it now runs from light amber to extremely light, almost water-white.

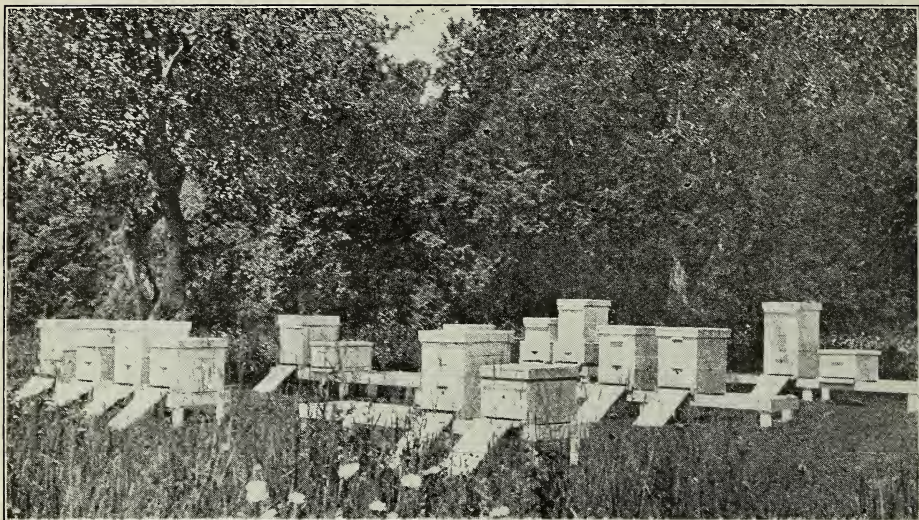
The increased irrigation has not only affected the temperature and humidity, but also the amount of moisture in the soil.

This causes a ranker growth of the alfalfa-plant, and I believe that this has something to do with the grade of the honey. I think a honey gathered from the plant when it is short of moisture, dwarfed in size, and blooming rather prematurely, has a tendency to be thicker and darker. Last year I extracted four different times during the season, and no two lots of honey were exactly the same in color. The darkest was in the hottest, driest part of the season when the plants were making their least vigorous growth. The best color was obtained in June and early July when the alfalfa was at its best, and the irrigation was heavy.

Now I also suspect that the color of honey is regulated somewhat by the volume and rapidity of the flow. When the blossoms are secreting rapidly and heavily, and nectar is just "rolling in," as we say, I suspect it is lighter in color than when it is coming more slowly.

I confess that this is all mere theory gleaned from my experience. The worst of it is, that every once in a while something will happen that seems to upset all the carefully worked-out theories; and conditions that ought to produce certain results will seem to obtain the opposite; but conditions and results as I have given them here seem from my experience to be the general rule of causes and effects, and possibly the occasional variations are the exceptions to the rule. At any rate, I am convinced beyond a doubt that here, at least, there is a variation in the color of alfalfa honey; and I think that some or all of the conditions I have mentioned, or perhaps, more strictly speaking, certain combinations of these conditions, produce the variation.

Glendale, Ariz.



Eighteen colonies owned by the Flintstone Farm, Dalton, Mass., that are kept to pollinize 3000 trees.

BEES A GREAT HELP IN A 3000-TREE ORCHARD

BY RALPH ELY

We have an orchard here at Flintstone of about 3000 young trees, and in connection with this we are interested in beekeeping, as bees are essential to the success of the orchard. We now have about eighteen colonies which did extremely well this year, as there was a fine flow of honey.

We believe that the size of our apple crop this year was due in a great measure to our bees. We note in our vicinity that

the fruit did not set according to the amount of bloom, and hence we believe that bees are one of the essential factors in successful fruit-growing.

We are running to the leather and Golden Italian, and find that the Goldens, particularly, give us a great amount of honey, at the same time showing very little inclination to swarm.

Dalton, Mass.

A SIMPLE METHOD OF FEEDING WITHOUT EXPENSIVE EQUIPMENT

BY L. C. LE MAY

I have had so many inquiries asking for more information on my article published Nov. 1, 1914, that I feel prompted to write a further article on my experience in feeding. The method that I outlined in 1914 is the most satisfactory of any plan that I have tried for cold-weather feeding; but to have it work properly the colonies should be prepared for it in the fall.

For feeding in milder weather to stimulate brood-rearing, storing up in the fall, etc., I have a method that works better than anything else I have tried. I take a super-cover and bore four or five holes 1 or 1¼ inches in diameter far enough apart to admit placing the Mason-jar feeders, mentioned below, over them without crowding, and yet not too far away from the center of

the hive. Over each of these holes I place a quart Mason jar with a perforated cover such as is used with the Boardman feeders, with a strip of tin soldered around the top or cap so as to raise it about 5-16 inch above the hole, allowing access to all the holes in the feeder. I have also used empty Crisco cans. By punching the cover full of small holes it makes a first-class feeder for this purpose. Another full-depth super must be placed on top of the super-cover and feeders with the hive-cover over that. For stimulating brood-rearing, all the holes in the feeder but two or three should be stopped up. One feeder for brood-rearing is enough, but for supplying winter stores as many may be used as desired.

This method works very well, and does

not cause robbing and stings. At the same time, it allows feeding the bees without disturbing them, which is a good feature.

If there are a few bees about the feeders when they are refilled it is well to use a little smoke to get them down out of the

way, and then close the holes with corks until the jars are refilled. All that is necessary to do when not using the super-cover for feeding is to plug the holes with corks, and then it is just as good as before.

West Hartford, Ct.

WINTER LOSSES LESS THAN TWO PER CENT

BY JOHN A. STEVENS

My bees are located in a well-protected spot sheltered by my shop and honey-house, and by a large semi-circular hill covered thickly with a second growth of brush. It

ings and a plain board cover over the cloth. The case is large enough so that there is a four-inch space all around the hive when it is placed inside, which space is also filled



A winter case for one hive which permits a four-inch packing-space all around.

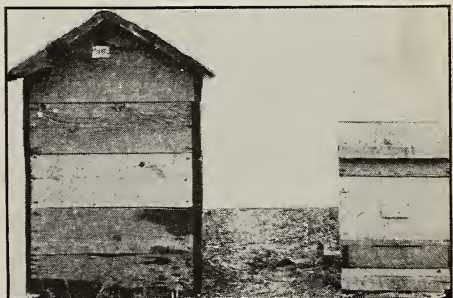
is an ideal place for an apiary; for when the wind is blowing a gale out by my residence, in the beeyard it seems like a nice quiet day.

The winter cases that I make hold one hive each only. The bottom-board is 24 inches long; and the 2½-inch tray which rests on it is the same length. A board 4 inches wide is nailed on the upper end of the tray, over the notched opening for the entrance. This leaves 20 inches for the hive, which abuts against this board. This means that the bees are obliged to travel 4 inches besides the thickness of the tray and the winter case before they get out.

I place an inverted butter-chip on top of the frames crosswise, then a cloth cut from an old sack. An empty super placed over all holds the cloth in position. When I pack I fill the super with planer-shavings and then another cloth is placed over the shav-

ings, as well as the 10 or 12 inch space on top of the packed super.

With this particular arrangement I do not have to worry about the entrance becoming clogged with dead bees. In very



The case and the hive. The ample packing reduces winter losses to less than two per cent.

cold weather, or if the bees are not sheltered, I contract the entrances down to one inch. All the trays have $\frac{3}{8} \times \frac{7}{8}$ entrances which correspond with the entrances of the winter case.

My losses with this method for the past

four years are less than 2 per cent; furthermore, the colonies come thru very strong. I have found new honey stored in the butter-chip over the brood-frame as early as May 10.

Mio, Mich.

A SANE AND SENSIBLE BEE DEMONSTRATION

BY JOSEPH GRAY

There is no question but that live bees properly handled make most telling advertisements at county or state fairs. It is the purpose of this article to set forth a sensible exhibit that will always draw a crowd, and yet give the lecturer time to become calm enough to command the attention of his audience without resorting to silly stunts that raise a laugh but do not impress the mind.

PREPARING THE BEES.

Two colonies of bees will rob and fight, if the day is not just right; therefore one only should be used, and it should be selected for its gentleness. Having the colony selected, the next point is to secure the queen, two drones, and four workers in a cage 2×3 inches, and $\frac{7}{8}$ deep; glass one side, and screen on the opposite side. Take care to have the cage supplied with sufficient candy and of the right consistency. The next step is to prepare the colony. This should be fixed up in a traveling-hive made from an ordinary ten-frame body with a one-inch space underneath the frames and a floor-board securely nailed on. The entrance should be arranged so that it may be quickly closed and fastened with one screw. A ventilated cover with handle completes the traveling-box along with a square of canvas for a quilt.

The combs should be well built and wired—neither too new nor too old. One comb should contain a portion of drone-cells and a couple of queen-cells. These are easily produced by taking two old cells and fitting into the comb a few days previous. The bees will tear down a live queen-cell, but will build in an empty queen-cell. Only a moderate amount of honey must be left in the hive, and it should be mostly sealed. The colony ought to be removed to a new stand two days prior to the show, so that most of the field workers will be left at home. It is the old fielders that do most of the stinging. Nearly all the brood should be removed, reserving only one or two combs that are necessary for show work. Such a colony does not have too many bees to travel with nor to handle.

ABOUT THE TENT.

A tent should be secured, slightly off from the main stream of visitors, but sufficiently near to a scheduled exhibition ring so that, when the crowd turns from the ring, the people will be ready for the bee exhibit. The tent can be made of 4 panels 12 feet by 8 feet, the top half net or screen, the bottom canvas or board. It is well to put guy-ropes at the corners; for the pressure is often very great if a crowd of 1000 gathers round.

The hive should stand on a packing-case rolled into the center. The bees should be given free flights, either the day previous or early on the morning of the show. This enables them to locate and use the open top, to go and come.

MAKING AN ARTIFICIAL SWARM ON AN ARTIFICIAL TREE.

When ready for the demonstration, prepare two or three carbolized cloths full strength (dry, not wet). Place the hive on the ground and adjust an artificial "bush." Here in Imperial Valley I use either the bough of a willow or cottonwood trimmed neatly and suspended from wires overhead so that it will just touch the middle of the table or box. Put on the veil. Don't be foolish about this—at least until you are sure of the temper of the bees. Have extra buttons on the cuffs so that you can button the sleeves tightly around the wrists. You may not need these preparations, but yet you may.

Open the hive, using the smoker. Hang the cage with the queen in the bush. The hive, being one comb short of its full number, is easy to manipulate. As rapidly as possible take out each comb and shake (not brush) the bees on to the table. As the crowd is increasing the air will be full of bees. Cover up the hive. Calmly lay a carbolized cloth at the edge of the bees on the table, and put another cloth on the opposite side. The bees will begin to run like a flock of sheep toward the bush. You can drive them and turn them at your will. Pick up a baby bee and throw it into the center of the bush. Urge up a few strag-

glers, pushing them forward with your hand. Hang the bush a bit higher, little by little, and the crowd will grow excited as they see a hundred bees hanging on to one bee. Hang the bush still higher, till at last the swarm is above, and the time for talking is at hand.

Few words are needed. Tell how you have made a swarm as near as possible to a natural swarm. Explain some of the inner

mysteries of the hive; exhibit the cage with the queen, drones, and workers, and then hive the swarm.

Simply tell the people what you know, just as tho you were talking to a friend. Use a few notes, if necessary, written on a folded card. After 14 years of lecturing you may forget something; yet the event will have been a success.

Heber, Cal.

THE OHIO FIELD MEET AT MEDINA

BY E. R. ROOT

As announced in our last issue, page 837, this was held in Medina, August 25 and 26. All told, there were 150 that registered, and something over 100 that participated in a "honey" luncheon on the first day. As already explained, Dr. E. F. Phillips, of Washington, and Mr. C. P. Dadant, of the *American Bee Journal*, were unable to be present. But fortunately we had with us Mr. P. G. Clark, of the firm of Doolittle &

rator in connection with a special manipulation that he uses with shallow brood-chambers. He has been an invited speaker at many of the large conventions of the country and is a good talker.

Some years ago Mr. House was rash enough to champion the Alexander method of treatment for European foul brood at a time when the bee-inspectors of New York and every one else, nearly, discredited it.



FIG. 1.—The Ohio State Beekeepers' Association on the occasion of the field meeting at Medina, August 25 and 26. The luncheon consisted of rolls, cakes, salad, cereal coffee, and ice cream, all of which were made with honey..

Clark, of Marietta, N. Y., and Mr. S. D. House, of Camillus, N. Y. The former is a breeder of high-class queens—queens bred for good looks as well as for service—queens that have proven themselves to be highly resistant to European foul brood. Mr. Clark is also one of the best honey-producers in his state. Like his partner, he is a careful observer and a good business man.

Mr. S. D. House is a comb-honey expert—a man who, in his state, produces the finest comb honey, practically all of which grades "Fancy" or "No. 1." He does this by the use of the Betsinger wire-cloth sepa-

When we visited Mr. House at the time, he had cleaned European foul brood out of his yards, notwithstanding the disease was rampant in all the yards within flying distance of his own. He showed us colony after colony that he had treated by dequeening for ten days and then requeening with vigorous Italian stock. With no other treatment these colonies were in perfectly healthy condition on the same old crooked combs in the same hives. We were so interested we asked him to write up his method of treatment; and almost instantaneously the bee-inspectors all over the country criticised us for publishing such "nonsense." Some

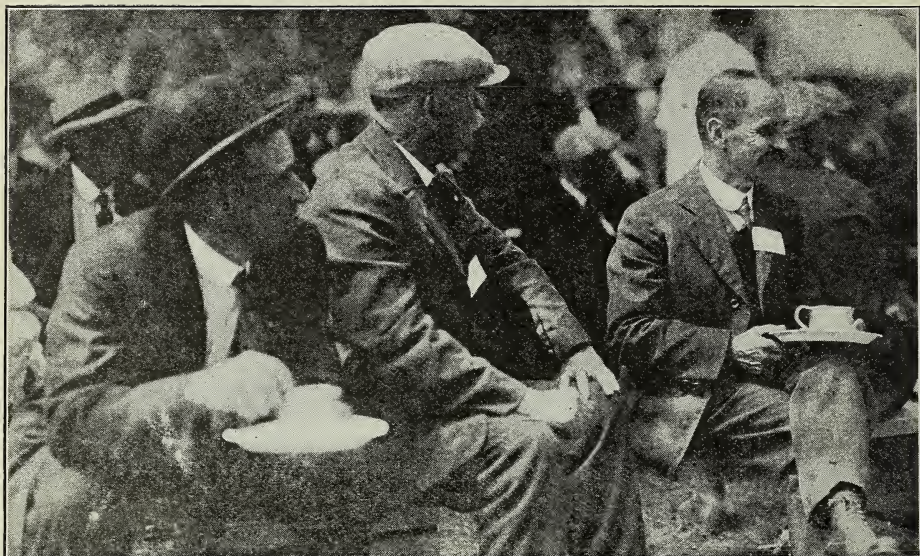


FIG. 2.—Messrs. Raut, Clark, and House, our distinguished New York visitors, just getting the point.

even went so far as to say that such "stuff" would be the means of spreading European foul brood all over the country, because it would be impossible for the inspectors to have the orthodox treatment (the McEvoy) applied.

Some years later, when Dr. Miller had

the scourge of European foul brood, we advised him to follow Alexander's and House's plan, and the readers now know that Dr. Miller does not fear European foul brood. Today the Alexander-House-Miller method is accepted as orthodox. "But," said Dr. Phillips, whom we met recently,

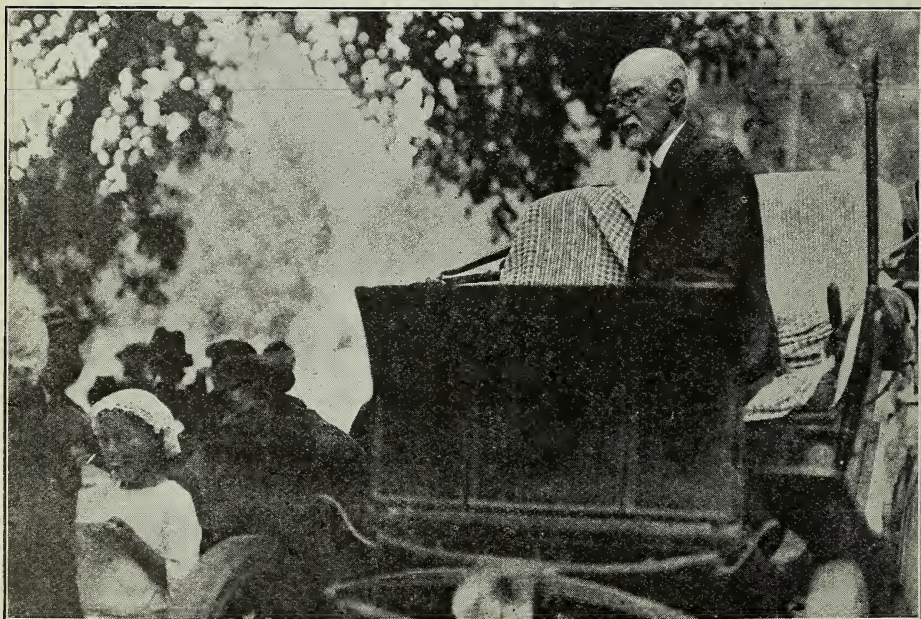


FIG. 3.—A. I. Root, in his electric, telling the Ohio beekeepers something of his early experiences as a beekeeper.

"the treatment is all right in the bands of the expert and the careful; but with the negligent and the careless, additional treatment should be applied."

With this preliminary we will now introduce Mr. House, who is seen at the right, Fig. 2. In the center is Mr. Clark, of Doolittle & Clark; and at the left is Mr. Raut, another New Yorker, who came with the two other gentlemen. In Fig. 3 is seen A. I. Root in his electric automobile telling some of his early experiences as a beekeeper. He mentioned his mistakes as well as his successes. In recounting some of his blunders he provoked a smile on the faces of his hearers; and at just that strategic moment our artist caught the trio as in Fig. 2. In Fig. 3 A. I. Root is seen in one of his characteristic poses when he is just on the eve of bringing out his point. It is a very natural picture of him as we see him every day in the office.

Fig. 1 shows the beekeepers sitting on extemporized seats eating their honey luncheon and drinking their honey cereal coffee, winding up with honey ice-cream. Over at the extreme right is seen A. I. Root addressing the beekeepers. The seats are on the lawn of E. R. Root, under the apple-trees, with the house in the background.

Among other speakers of the evening were Mr. Fred Leininger, a breeder of fine queens, and President of the Ohio State Beekeepers' Association; Mr. House, Mr. Clark, and Bee-inspectors Ames and Phillips; Prof. Jas. S. Hines, of the Ohio State University, and Melville Hayes, an attorney at Wilmington, O.

On both days, modern extracting machinery, including a power extractor and an uncapping-outfit, were in operation for the visitors. All were given the privilege of going thru the factory buildings, including the honey-bottling department, where honey is being put up for the general market.

On the afternoon of the first day a moving-picture film showing many live-bee operations was put on for the benefit of the visitors, at the Princess Theater, Medina.

On the second day, the company were taken in automobiles to the queen-rearing yards north of town, where the entire operation of rearing queens was illustrated and described.

A FAN FOR HOT DAYS IN THE EXTRACTING-ROOM.

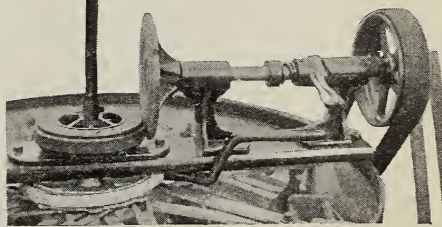
When the crowd reached the extracting-room there was considerable joking about

the "windmill" up over the extractor; but when we started up, the affair proved the truth of the saying, "Handsome is as handsome does." It was a hot day, and the breeze easily felt fifteen feet away was very welcome. This sort of fan means very little additional load for the engine, requires no extra belting or machinery, and can be constructed at a very slight expense. A half-inch pipe with a coupling on the lower end will just slip over the upper end of the vertical shaft in the extractor. There ought to be one or two set-screws in the coupling to hold the pipe firmly to the shaft.

At the upper end of the pipe there should be a saw-cut running down thru the middle



a distance of $4\frac{1}{2}$ inches, and at right angles to it another one the same depth. Two pieces of heavy sheet metal, four inches wide and three feet long, should each be bent to a right angle in the middle. A thin board eight inches wide for a paddle should be tacked to each end of



the two pieces of sheet metal. When these wings thus made are dropped into the saw-cut a cap should be screwed on to the upper end of the pipe holding them solid. The fan is completed by giving each board a twist, making a uniform bend in the sheet metal next to the pipe.

When running, if the fan shows a tendency to wobble somewhat, a small hole may be drilled into the center of the cap on the upper end of the pipe, and wooden

braces run from there up to the ceiling. A single nail thru the lower end of one of the braces into the hole in the cap holds the upper end of the pipe securely and makes the fan run true.

On cool days, or whenever the fan is not

wanted, it is the work of but a moment to loosen the set-screws at the lower end of the pipe and lift the whole thing off.

The next Ohio field meet will be held at the apiary of Mr. Melville Hayes, Wilmington, O.

MAKING COLONIES BY FEEDING SYRUP

BY PAUL FUNK

During 1915 the honey crop with us was a complete failure, consequently we had no natural increase of bees. Not wishing to lose a whole year of the bee business, and desiring more bees, I decided to make increase by feeding.

During the first week of July I started my increase with two single-frame nuclei of brood and bees taken from old colonies. To these two nuclei I introduced young queens. The new colonies were fed syrup made of 2 to 2½ parts of granulated sugar to one of warm water, stirred until thoroughly dissolved. These colonies went into winter quarters with eight combs fully drawn out. Some of the frames had contained full sheets of foundation, and some only starters. Each hive was heavy with honey (sugar), full of young bees, and with a good portion of brood. The colonies wintered outdoors in good condition, coming out in the spring with plenty of bees, and with feed enough for spring breeding. There was no trace of dysentery. About one-third of the other colonies wintering on natural stores died, and some were left very weak.

As to the cost of these made colonies, the sugar was bought just before the 1915 sensational advance in price, for \$5.65 per 100 pounds. An average of 22½ lbs. was fed each colony. Therefore, for building up each nucleus to full strength and with sufficient stores for wintering and spring

breeding, the sugar cost \$1.27. The queens cost 65 cents, making \$1.92 as the total cost of sugar and queen for each. Surely this is a most reasonable cost for a strong colony of Italian bees with a young queen.

Last year, about Aug. 1, a colony superseded its queen. This colony cast a swarm which settled in two parts. The smaller bunch had probably half a gallon of bees, which were hived on full sheets of foundation. They were given a young Caucasian queen, fed 18 lbs. sugar, and this summer the colony was one of my best.

Some one will probably think that these made colonies carried in some fall honey. They got very little, for there was but little honey to get, and until late in the fall the colonies were not strong enough to do much field work. The bees seemed to have devoted their every effort to increasing from the sugar fed.

Warsaw, O.

[We believe that these nuclei, in spite of what our correspondent says, secured some honey from natural sources. If 22 pounds of sugar was fed, that would mean 33 pounds of syrup — barely enough under some conditions to winter a good colony, to say nothing of making the increase in bees, permitting the comb-building, etc. We fear that the figures given are low. Then no account is taken of the labor—an important item, surely.—Ed.]

FEEDING IN TWO-QUART JARS OVER THE BROOD-CHAMBER

BY W. C. MOLLETT

I have tried almost all the bee-feeders on the market, and am not fully satisfied with any of them in all respects, altho all of them have some advantages. Lately, I have been trying another method which is not quite like any other, altho it is on the Boardman principle. The first thing necessary is a flat cover the size of the hive, and about ¾ inch thick. With a brace having an expansion bit I bore a hole in the center of the cover just the right size to admit the cap of a Mason jar, which is about three inches.

These feeder-boards are best made of one piece of lumber; but they can be made of a number of narrower pieces when necessary. After the boards are ready I get some caps for use in Boardman feeders, and then prepare the syrup as usual. Then I fill the jars with syrup and put a rubber ring on the cans as they are used in canning fruit, and put the caps on them. I remove the hive-cover and place the feeder-board upon the hive, and then I am ready to feed.

I go around to each hive to be fed, and

simply invert the jars and place them with the caps in the opening in the center of the feeder, and the sides of the jar rest on the board so that they will not turn over. This brings the caps directly over the bees in the most convenient position for them to carry down the syrup. By this means I can feed at different times during winter, as the bees can carry down the syrup when it is almost freezing cold. Of course it is always better to feed before the weather becomes very cold, but sometimes we are prevented by having other work, and are compelled to feed later than it should be done. For my use this method is far superior to any other, altho, of course, others might not appreciate it. I generally set an empty hive over the jars and replace the hive-cover to keep out dampness, and in this way there is no hurry about removing them.

Some of the advantages of this method are: It is possible to feed a considerable number of colonies in a short time. If the

syrup is not carried down at once it can remain until the bees find the weather suitable; also you can see at once just how fast the bees are carrying the syrup down; and it is possible to regulate the amount by stopping up some of the holes in the cap.

By using jars holding half a gallon, filling is necessary only once or twice. The bees can carry down about half a gallon per day when the weather is warm, and this makes it a short job to finish all the feeding for the season. This method makes it possible to feed without causing robbing. Also by feeding over the cluster it does not tend to cause the bees of the other colonies to become excited. I first learned this method from a neighbor, Wm. Damron, and so I call it the Damron method.

Stonecoale, W. Va.

[Mr. LeMay, p. 724, describes a plan very similar to this except that he bores smaller holes and more of them.—Ed.]

APHORISMS, SUNDRY AND OTHERWISE

What about Feeding Sugar and Requeening in August?

BY ARTHUR C. MILLER

[The following article, as will be noted, was written some time ago; but because of the crowded condition of our columns during the publication of the summer special numbers it has been held over. The reader will not properly understand what it is all about without turning back to Mr. Crane's interesting article on feeding sugar syrup, etc., page 145 of our Feb. 15th issue.—Ed.]

The editor is to blame—as usual. If he hadn't put the Greek into my title I would not have got in Dutch with Mr. Crane. At first reading of his come-back (February 15, page 145) I was inclined to think my notes were at fault; but now I see it is a matter of the difference between the Crane and the Miller policies.

When I have said requeening in August, I have usually taken pains to borrow Dr. Miller's saving phrase, and add "in this locality." Midsummer—July—is when our main surplus flow comes, and sometimes it runs well into August, so we do very little dividing then. When we divide after that, as well as at other times, it is a process of taking from more or less of the colonies one or two combs of brood each and making good colonies from them and giving each a queen. That keeps all in the "strong class." Thereby I gain over Mr. Crane's way. Did you ask if I never have any weak colonies? Certainly I do; and, furthermore, you will be pretty sure to find some of them being wintered, or attempted. But you can count them on your fingers, and generally on those of one hand. They are experiments.

Bees usually get abundant stores in August, September, or early October (or in

all three months) if the colonies are strong; hence I say, "keep them strong." When Mr. Langstroth first wrote that, he was a southern New England beekeeper.

As to feeding, much recent advice has been toward feeding thin syrup so the bees would "invert" the sugar. Others said feed, late and quickly, a thick syrup. Now the poor bewildered novice is in a nice state of mind; and, oh how often I find feeding put off until bees are slow to take the feed and then cannot properly store it! Unfortunately in our climate if we feed early—say about September 20—we may find so much brood that there is not much room for food. If we wait until a little later we may run into an early cold spell and find it almost impossible to get satisfactory storing. So in this locality we try to keep our colonies strong, then they will force down brood-rearing if the fall flow is good, and seldom need feeding; and if we have to feed, the colonies are big enough to handle it, even if we have a cool spell. But for five years prior to 1915 the late flow failed and a lot of feeding had to be done. In 1915 there was a fine fall flow, and the strong colonies forced down brood-rearing, packed everything, and went into winter quarters in ideal shape.

No feeding or fussing we can do will give results equal to those the bees secure when conditions favor, and those conditions are a flow and *plenty of bees* to take care of it.

Now 'tis said, "confession is good for the soul;" and if it were only equally good for material customs and habits it would help us a lot. Mr. Crane says he has fed "tons and tons of sugar syrup." If it were any one else I'd say he was a mighty poor beekeeper; but I don't dare say it of Mr. Crane; but I can most positively say that the need of feeding can be materially lessened by different (improved) methods. (Phew! I almost said, "by better beekeeping.")

(Lest those who are not familiar with my chaffing should construe the foregoing as a hit at Mr. Crane, let me here say that it is *not*, but is intended to arrest attention and direct it to the costliness of many widely followed practices.)

As for "protecting combs from wax worms," his was a rather costly way. Just figure the labor and the food. He says it proved a financial success. I wonder how he figured it.

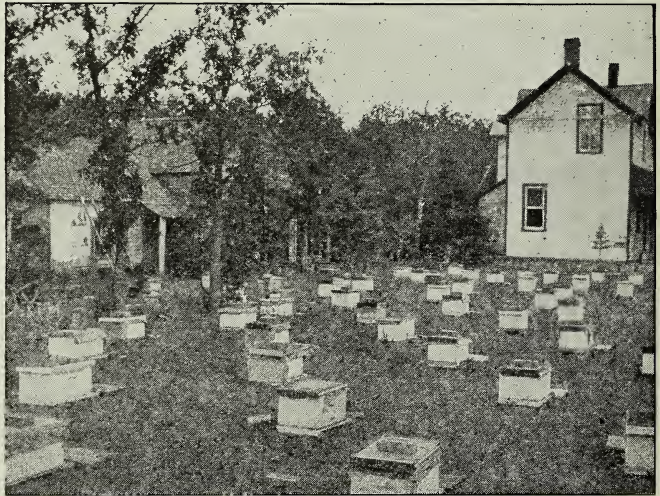
I can keep combs more cheaply than that; and if I wanted increase at that season (most of ours is made *before* the crop) those combs would have been traded for one or two frames of brood from every colony, and the new colonies would have nearly equaled the old from the start. It is quick, economical, and gives the best of results. But wax-moths bother me only where black bees are kept near.

Rather presumptuous for me to try to tell you how to keep bees, isn't it, Mr. Crane? To be sure I've not kept bees quite as long as you have (I began in 1880), and I have not so many as you (about 200); but my needs have compelled me to make short cuts, and my business training has led me to put the yardstick of cost on to my operations. Oh, yes! I do some things which are not economical; but that is where I am experimenting—that is my play.

Do you realize what it costs you to pro-

duce a pound of honey? (Comb and extracted are pretty much the same.) Do you know that it costs some specialists over ten cents a pound, taking good years and bad? Do you know that two or three go as low as two cents? But these latter sell their own crop, so they have only half a year's labor to charge up to cost of production.

There is the matter of annual requeening which I follow so carefully. Young queens and fine combs I consider the foundation on which all the other parts of my beework are built. But it is assailed by many because they say so many queens are good for several years. If they will tell me some way by which I can pick the good ones at the



"Bill" McLeod, whose apiary is shown herewith, according to the *Neepona Press* (Manitoba), is a practical joker. At an agricultural fair he entered some specially prepared honey as soft soap, and the unsuspecting judges gave him the second prize. He kept the matter secret until he had secured possession of the blue ribbon, then gleefully started out, exhibiting his "soft soap" and the ribbon. Doubtless the judges had not tasted the soap.

start I'll consider their methods. When I see the miscellaneous assortment of colonies they have each spring, and hear them tell how they go to building up, etc., I am content to follow my plan, even if I do unwittingly destroy some queens which, if allowed to survive, would have proved to be sisters of some bee Methuselah. Then queens are so cheap I really cannot afford not to use them liberally. They cost me less than ten cents each.

In that same issue (Feb. 15), page 139, Dr. Miller takes issue with some one for saying that there is no need of having a queen a year old to determine if she is a good breeder. Well, I fear that I must take sides against the doctor; but with this qual-

ification, the "strain" must be known; however, my queens are at least eight months old before I pick the breeders—only one strain in my yards so far as I can manage it. It makes for economy, and is one of the reasons why I let out against late feeding; for so few beekeepers have all colonies alike, and so many have a lot of colonies short of young bees, and those are the ones which usually suffer the most from late feeding, particularly of thin food. Variation from normal proportions of old and young bees is at the bottom of many of our troubles in beekeeping at other seasons as well as in the fall. The only practical way to avoid such variation is to keep the colonies headed with vigorous queens *all the time*. Then "building up colonies" in the spring and feeding tons of sugar in the fall ceases to be a habit. (Dr. Miller's building up is quite a different thing from the common practice; but it is very costly in labor, and I have often wondered if he could not avoid the need.)

As to bees in orchards, I was talking of *my* bees while Mr. Crane was thinking of the *orchardist's*. For the sake of my peace of mind I want my bees "horse distance" away from where they are to be worked.

That phrase did just what I made it for—drew attention to the need of keeping bees and horses a safe distance apart.

If Mr. Crane will visit Essex County and some other sections of eastern Massachusetts he will see the curse of spray-crazy people. So long as orchardists are careless in such matters, so long they must buy bees to poison. I'll keep mine a safe distance away. It is the "times that spraying does kill the bees" that I am afraid of; and as I cannot tell in advance, I avoid the risk.

So far as perfect pollination of a big orchard in a stormy spring is concerned, the scattering of bees thru the orchard is the best, as I showed twenty years ago. But in the article Mr. Crane took issue with I was considering *my* honey crop, while he was thinking of the orchardist's fruit crop. I keep bees for honey, not to accommodate some one else. If my business and his work in harmony he is welcome to such benefits as my bees will give; but otherwise I shall move to distant fields, as I have had to do in one case.

So the reader will see that Mr. Crane and I are not so very far apart. We were simply looking at things from a different point of view.

Providence, R. I.

HOW TO MOVE HIVES OF BEES SHORT DISTANCES

BY DR. C. C. MILLER

When a bee takes its first flight it spends some time in marking its location, not so much in noting the appearance of its hive as that of the surrounding objects. Change its hive, or the appearance of its hive, and it will show some confusion and hesitation about entering, but will soon accept the change. Move the hive to a new place, and just what the bees will do depends on circumstances. When I had only one colony of bees I moved the hive to a new place about a rod distant. When bees next returned from the field they went straight to the old place from which the hive had been moved. Surrounding objects had not been changed, and by them they were guided. After sailing about the old spot for a little while they began to search the neighborhood, and soon found their old hive in its new place. How far it might have been safely moved I do not know, but very likely it might have been ten rods or more, possibly much further.

But it's quite a different matter with the present number of colonies in my apiary. If I move a hive to a new location the bees returning from the field will be likely to

enter one of the hives *nearest the old location*. So it may happen that they will not find their hive if it be moved only four feet, if that leaves some other hive within less than four feet from the old location, as would happen where two hives are standing close together and one of them jumps to the opposite side of the other.

As a general rule a bee probably marks its location once for all. That lasts for its usual lifetime of about six weeks, and no doubt would last indefinitely if it were to fly daily. But after confinement for a time, upon its first flight again it will mark its location anew. How long a confinement is necessary to make it mark anew its location I do not know; but I know that it varies greatly according to circumstances. After the confinement of three or four months in winter the location is invariably marked upon the first flight in spring; yet even then, if a hive taken from the cellar is put on a stand other than the one it occupied the previous fall, the bees will in some cases be seen flying about the old stand, showing that it has not been utterly forgotten. On the other hand, at a time when a heavy flow

is on, if stress of weather confines the bees to their hive a very few days, they may be seen marking their location as soon as permitted to fly.

Bees may also be seen sometimes to mark their location anew after being confined to their hives a few hours, a few minutes, or not at all, if they have been under some great excitement, such as the excitement caused by being heavily smoked.

There seems good reason to believe that there is a more or less close connection between a locating flight and forgetfulness of location; in other words, that when bees mark their location at any time it is to forget all about where they were previously.

In a few words, then, we find that bees mark the objects surrounding the hive rather than the hive itself, and that confinement and excitement are elements that help to make them mark their location and attach themselves to it.

With these points in view we are ready to consider what must be done to make bees stay put when moved to a new location.

If a colony be moved ten miles from its old location, no precaution need be used, no matter when the change is made. There will be no danger of the bees returning to their old location, for it is beyond their finding. Nor need the distance be ten miles. In most cases probably a mile and a half, or even a mile, would serve. But, no matter what the distance, if the bees upon going afield from their new location should happen upon ground whereon they had previously pastured, it is quite likely they might return to the location they had always known as home.

Suppose, now, that we want to move the colonies of an apiary a short distance at a time when they are in daily flight. If the distance be only four or five rods, with no other bees nearer, and if the hives have the same relative positions in the new place that they had before, each bee might be expected to find its own hive without trouble. But at some point the distance may become so great as to make trouble, possibly at the distance of one or two city blocks. More or less of the bees upon their first flight would return to the old location. Everything would look homelike to them except that their hives were absent. We can imagine them circling about the old spot, perhaps to the distance of a few rods, looking, looking, for the old home, and finally settling down upon the old stand, saying, "Well, this must be our old home; everything looks homelike, only our hive is gone. No use to look any more; all we can do is to stay here and wait till it returns, if it

ever does return." And so they settle down despairingly to await the end that comes to them in due time. Clearly it would help matters if they could not recognize the spot as their old home; and that will be accomplished by changing appearances, moving or removing any old objects that are movable, and bringing upon the ground new objects, thus practically taking away their "location."

However long or short the distance, we may take advantage of the two factors previously mentioned — confinement and excitement. In the evening before removal the bees may be fastened in the hives or else in the morning before they fly, and not opened till some time the next day, care being taken that they are not left so long as to smother in a very hot day. An hour's confinement at a time when the bees are anxious to get into the field may equal a month's confinement in the middle of winter, for the bees become very much excited when they find they cannot get out. Instead of moving the bees so softly that they shall not know they are being moved, they may be left on the old stands till well on in the day, and then trundled on a wheelbarrow or taken by some other rough conveyance. The rough handling increases the excitement, which may be still more increased, if thought necessary, by pounding on the hives just before opening the entrances and by smoking. A common practice is to put a board before the entrance for the first flight. This, either on account of added excitement or for some other reason, helps to make the bees mark their location.

Suppose, now, that the bees have been moved, and that for fear of smothering them we have not been vigorous enough in our precautions, and that some of the bees have gone back to the old place, perhaps settling in clumps. The case is not at all hopeless. Set in the old place a hive containing a few combs, with or without honey, and in the course of the day all the returning bees will be assembled in this hive. Take them to the new location and give them where they will do the most good. Repeat the performance the next day if any more bees return. So effective is this treatment that it may be used as the only means to attach the bees to a new location. For the transition from the cheerless condition of being without a home or a mother to one where they have both is so great that the joyful excitement destroys all attachment for the old home and awakens a lasting attachment for the new.

Marengo, Ill.

Heads of Grain from Different Fields



THE BACKLOT BUZZER.

BY J. H. DONAHEY

Uncle Benny Motherwort thought the sour smell around the home yard was foul brood. When they convinced him it was from goldenrod he was afraid to eat it for fear he'd get the hay fever. Benny's boy says his pap is such a pessimist that he chews his quinine pills.

Giving Away Stock to Requeen a Locality.

The thanks of the whole fraternity are due J. L. Byer for his graceful and manly defense of queen-breeders on p. 185, March 1. I have faith enough in humanity to believe that most of the queen-breeders are trying to do the right thing by their customers, knowing that, unless they do so, they can never hope to build up and hold a trade that will justify them in following the business as a vocation.

No doubt there are some who advertise themselves as queen-breeders who should never have attempted that line of business. They have been so excited over the great profits(?) to be made by selling young queens for 75 cents to \$1.00 each that they have rushed into the business without adequate preparation. Before one attempts that line of the bee business he should be sure that he has a superior strain of bees, not as shown by the yield of a few individual colonies, for that may be the result of robbing, but by the average results from all the colonies.

Then he should be sure that he knows how to rear the best queens. He should practice for several years, rearing his own queens

and noting how they turn out as honey-gatherers.

When he knows that he is fully qualified along both these lines he should next clean up all the hybrids and strains, other than his own, within mating distance of his queen-yard. This is not so difficult as it may sound. He must not expect his neighbors to purchase his queens at catalog prices. They are not enough interested in bees for that. If a neighbor has only a few colonies it is the cheapest plan to give him untested queens and introduce them for him. If he has from twelve to thirty or forty colonies the young queens may be reared in the man's own yard from cells grafted with larvæ from our best breeders. A few colonies of pure stock will usually be found. The drones of those colonies may be allowed to fly, while the drones of other colonies should be trapped and the heads of all drone brood shaved off. This will generally result in a fair percentage of pure matings. Any mismated queens may be replaced later. I have found small beekeepers quite willing to co-operate in requeening their bees. In fact, they are usually delighted with the idea, when they find it is not going to cost them any money. If the would-be queen-breeder is too much of a "tight wad" to do that much for his neighbors, when it is himself that is to reap the greater profit, he'd better keep out of the queen business, for he will certainly be called upon to make greater sacrifices than that. When he thinks he has all the hybrids and bees of off color cleaned up in his neighborhood he will still have a queen mismated occasionally.

Mathis, Texas.

H. D. Murry.

Newspaper-wrapped Hives.

The method I use to prepare bees for winter is not new, but it may be new to some. An escape-board is first placed on top of the hive-body, and, over the place where the escape should be, a piece of burlap. If the bees are short of stores I put on a paper pie-plate or more of hard candy, spaced from the escape-board by two or three small sticks, and then the burlap. A super is then set upon the escape-board and filled with planer-shavings.

I then take several newspapers or two thicknesses of building paper and wrap the hive up as I would a package (not the bottom of course), folding the paper over the top and then slipping the metal cover down over the super, first placing a small stick or nail on the edge of the super to make a little air-space under the cover.

The paper is then tied tight at the bottom with a single piece of twine and pieces of lath tacked up and down where the newspapers overlap, or wherever the paper seems to bulge a little, driving the nails only part way in, so they may be easily removed in

the spring. One would think that the first rain would wash newspapers off; but such is not the case, as they will be almost as good when taken off the next spring as when first put on. If the entrance becomes clogged with dead bees or snow and ice, the bees will be able to get sufficient air overhead, thru the shavings. This location is very near the center of Pennsylvania, and this method of wintering has given me uniformly good results.

I find it a good plan to leave the super of shavings on until June 1, even tho the paper has been removed. It will greatly assist the bees in keeping up the temperature of the hive during cool nights, as the shavings absorb a certain amount of heat during the day and release it very slowly.

In case it is necessary to put a super on during fruit-bloom, all one has to do is to lift the escape-board, super of shavings and all, and slip the other super underneath.

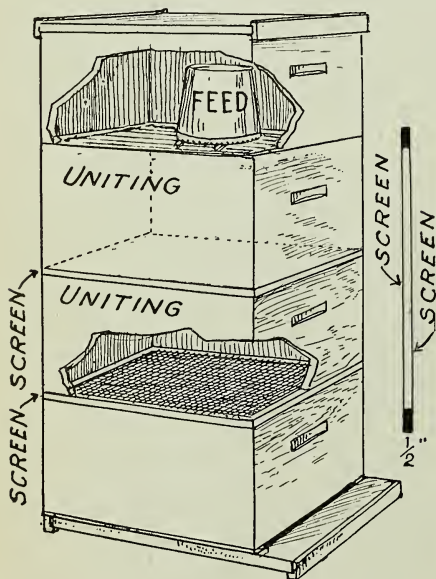
When the shavings are removed, if they are placed in front of the hives an inch or so thick they will keep the grass and weeds down for a long time.

Oseola Mills, Pa.

J. A. Allard.

A Uniting and Feeding Screen.

For uniting I use a double screen that I think is very convenient. I make a frame $\frac{3}{8}$ or $\frac{1}{2}$ inch thick of strips $1\frac{1}{2}$ or 2 inches wide, the outside measurements being the same as the outside measurements of the hive. I make mine $16 \times 19\frac{1}{4}$. Since my



strips are 2 inches wide, the inside measurements are $12 \times 15\frac{1}{4}$. I tack the wire screen on both sides, so that the bees will not be able to sting thru. I always have a number of these double-screen frames on hand.

Over the colony to which I wish to unite one or more colonies I place a screen, then the hive to be united, of course first removing the bottom of the upper hive. If another colony is to be added also, I put on another screen, and then the third hive on top of that, making sure that the upper hives have no outside entrances. The entrance of the lower hive is left open. After putting the cover on top of the pile I leave them this way for three days and nights. The third evening about dusk I lift up the upper hive carefully, just high enough so that some one else can pull out the screens. I always take out the lower one first. In the morning the bees will all be together just as tho nothing had happened.

If I want to do any feeding at the same time, I invert a ten-pound honey-pail having a perforated lid over the frames of the upper hive, placing another empty hive body on top to cover the pail. Of course, since the uniting takes only three days, the feeding can just as well be postponed until a few days after the screens have been taken off.

After the bees are all together I leave the extra hives on for four or five days until the bees have become accustomed to their new home, then shake them off their new combs in front of the entrance and remove the surplus bodies. This plan with me has never failed.

Wabash, Ind.

F. J. Rettig.

Candy the Principal Winter Food.

I have been keeping bees for 35 years in this locality, and I have so much faith in my system of wintering bees that I believe I could be successful in wintering them in Munetaha or Saskatchewan, if I can find a locality where the beeyard would be protected from high winds by a side hill or in a ravine, or any place where high winds do not prevail. I do not feel alarmed because of much snow or heavy frost; for if my double-walled hives or my bee-clamps are buried up in snow, all the better. And in the cellar, if I can keep the temperature between 40 and 45 I have no fear whatever.

I use a great deal of bee-candy in the winter. I experimented on bee-candy for winter for 35 years, and I find it better than any other substitute for honey, as the bees have less dysentery. My outside bees have had a very few cleansing flights, and yet show very little spotting of the hives. I feed in the open air, spring and fall, 8 rods from the beeyard. I also feed artificial pollen in the spring till the willows and dandelions are out, then I dispose of artificial pollen.

I hear much about robbing; but I have had no difficulty along that line for the last 15 years. It is the careless beekeepers that have that bother. My correspondents frequently ask me why their bees die and leave lots of honey in the hive. There are many different reasons for that, but time and

space do not permit me to explain. Study the weather in the locality. All localities are not the same. The fall, winter, and spring management that might suit my locality might not suit yours, and yours might not suit mine.

Port Elgin, Ont.

Geo. Guyer.

Letting the Bees Leave of Their Own Free Will.

My method of taking off comb honey does not include the use of bee-escapes. When there is a honey-flow I simply give a few puffs of smoke in the top of the sections to rid them of the majority of the bees, and then I lift the super off from the hive and set it down on the shady side of the hive with one end on the ground and the other end against the side of the hive. This permits a circulation of air thru the sections, and the bees will leave it rapidly.

I continue in this manner until I have taken off about 500 lbs., when those which were taken off first will be practically free from bees.

The sections are then taken from the section-holders and conveyed to the honey-house or any other place used for their storage.

When there is no honey coming in, this work will have to be done in a different way; however, the difference is slight. The honey is taken off, and the super put down on the ground at one side of the hive with the corner of the super about four inches from the end of the alighting-board, and a hive-cover put over it.

I now continue taking off honey in this manner as before until a few hours have passed, when the bees will leave the super under the cover, and robbers will not bother if the operator is careful (this method applies to telescope covers). When the bees have left the sections the operator can take the honey from the section-holders.

Sometimes during unfavorable weather the bees will not all leave the sections within the usual time, but they will collect in one corner of the crate and give no trouble in getting them out.

In my opinion this method surpasses the use of bee-escapes and all other systems in the matter of saving time when it comes to taking off comb honey; and I think others, upon trying it, will favor it likewise.

Roxbury, N. Y.

M. E. Ballard.

Wintering a Teacupful of Bees in a Single-walled Hive.

Mr. Editor:—You tell Samuel K. Johnson, Dec. 15, that he will have to sacrifice some of his queens if his colonies are not strong. On account of a scourge of American foul brood a few years ago, and a hurry-up effort since then, I have had no little experience with colonies that were not strong. I have wintered bees that clustered between only two self-spacing Hoffman frames, and they were as strong, apparently, when they came

out of winter quarters as when they went in. These frames had drawn combs which were about half full of capped honey on the side next to the bees. I think I can winter a teacupful of bees in a single-walled hive out of doors.

Last winter I had seven very weak colonies in one row "heeled in." The hives were set close together, covered on the top and back with chaff, with about one foot of dirt on top of the chaff. The fronts of the hives are toward the south, and are exposed. On December 22 the bees had a flight and were out almost to a bee. I have never seen any mixing.

I have other colonies covered with chaff and boards, and others with chaff and dirt to the eaves. The front of the hive, however, is always exposed. So far I have had no loss in wintering weak colonies in this way. The weaker they are, the more I "heel." On warm days when there is snow on the ground, I stand a board in front of the entrance.

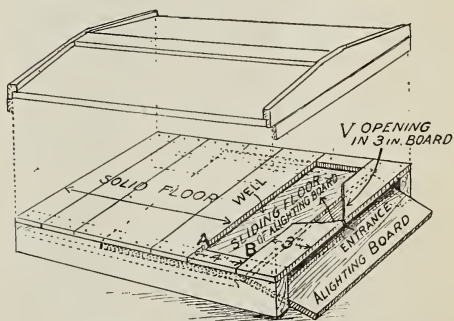
Don't sacrifice any good queens, because your colonies are weak, for, wintered this way, they build up fast in the spring.

Westfield, Ind.

A. L. Beals.

Floor-board with Adjustable Entrance under the Hive.

A short time ago some one described a floor-board which provided an entrance under the hive, and thus entirely eliminated the porch. The only notice taken of it was by one beekeeper who said that an entrance under the hive could not be watched against clogging-up, etc. I will describe the board I invented some years ago and still use.



The main floor of the hive is composed of boards of the right length nailed across battens on edge, say three inches by one. The front board is only three inches wide, and between this and the next is a space of four inches, after which the boarding to the back is solid. Of course the "well" thus made is protected at the sides by pieces of the same thickness nailed on to the battens. The front board has a V-shaped piece cut out from the under side to half its width, the point of the V to the front. The alighting-board slides close under this floor on ledges nailed to the battens.

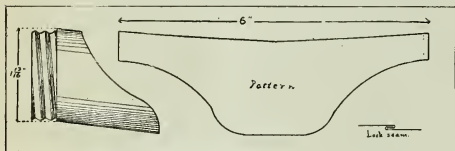
When the alighting-board is slid right up to the front of the V-shaped groove, there may be an entrance of only a bee-space. As fast as it is slid back the entrance widens, till a slit is uncovered in the well itself; then that slit deepens till there is an entrance of fifteen or sixteen inches by four. It is quite easy to make the draft great by day and less by night by going to the back of the hive and pushing the alighting-board forward or pulling it back by means of a suitable handle nailed to its under side.

G. G. Desmond.

Sheepscombe, England.

Handy for Emptying Cans.

No doubt every one who handles extract-honey has experienced difficulty in pouring from the sixty-pound can, or any can, for that matter. I have overcome that difficulty for myself by taking a spare easy-fitting screw-cap, and, after cutting out the top, soldering to the band thus produced a tubular spout about 2 or 2½ inches long. To cut the top from the cap, file the edge all around until the parts will separate without using force. The greatest care must be used not to bend or spring the band out of shape. The piece for the spout, when cut out and ready to be rolled up, will look something like the sketch pattern. Bend the tin around



a piece of wood, but don't use the band, as the spout must fit the band without strain. The ends of the piece should be locked together and soldered before attaching to the band. There is no trouble in locking the ends—just turn the edges as seen in the cut, and drive the seam down close. (The spout might better be fitted to the cap before cutting out the top.)

When the spout fits easily and nicely the two may be soldered together. The best plan is to cut and fit a stiff paper pattern, by means of which the tin may be marked out just right with least trouble. A tomato-can will furnish the material and an old pair of shears will do the cutting. Any one who can do soldering can thus easily provide himself with this great convenience.

New Jersey.

C. D. C.

Woolly Buckthorn as a Honey-plant.

I am sending a honey-plant. My brother-in-law gave it to me for hogs. Hogs seem to like the haws, but I have not paid any attention to the tree until this week, or, rather, I had not thought much about it. It is in bloom now, and you will see that it is a heavy bloomer, and it bears accordingly. The berries are about the size of a black-

gumberry, and have a seed like the black-gum. But the bees around this tree put me to thinking of the probable value of this tree. I never saw so many bees about anything except a honey-tub. The tree is about 10 feet high, with a heavy top.

I want you to advise me as to planting a grove of them for bees. I believe they would be good for hogs. They seem to like them any way, but I don't know that it would pay as a hog feed; but if they are good for honey and hogs, I think it would pay to plant. I brought the tree from Florida.

Groveland, Ga.

T. E. Sullivan.

[This was sent to our botanist, who replies:]

This shrub or tree is woolly buckthorn, or *Bumelia lanuginosa* (Michx.) Pers. It is widely distributed in the woods of Florida, Georgia, and other southern states. It belongs to the sapodilla family, or Sapotaceae, the species of which are largely found in the tropics. Plantations of this tree for honey only would probably not be profitable. The cost of the land, the expense of planting, and the long delay before there would be an abundance of bloom, must be considered, assuming that the species is suited to the soil and climate. Experiments in planting trees and shrubs as honey-plants might well be made by state governments or wealthy individuals, but experience would seem to show that they are not advisable for those dependent on their farms or apiaries for a living.

Moreover, in Georgia there is, according to J. J. Wilder, a large area covered with gallberry bushes which is only partially occupied by beekeepers. He says it is difficult to overstock a gallberry region. Would it not be better to locate in such a section of the state, where a crop of honey could be obtained immediately, rather than to plant trees of the woolly buckthorn for some indefinite future time? As to the value of the berries as food for hogs I am unable to speak.

John H. Lovell.

Waldoboro, Maine, July 24, 1916.

A Brand-new Idea for a Profitable Ad.

I caused the following to be printed in local papers, and had a copy of it, with many recipes calling for honey, to be sent to every school in the county, the county superintendent helping me by volunteering to send out the circulars with his own mail, to the teachers.

PRIZE ESSAY.

To the Crawford County school child under sixteen who sends me the best essay on *honey* I will send a gallon of *Bonney Honey*, postage paid, as a free gift. The teacher must certify to the article. Time limit, December 15. The winning essay will be printed in the county papers.

DR. BONNEY, King-bee.

The Buck Grove Apiary, Buck Grove, Ia.

It has been but two weeks since I commenced this, and I have already got results. I think it is going to prove a very profitable advertisement.

Buck Grove, Ia.

A. F. Bonney.

There are Goldens and Goldens.

I have been amused at the different opinions of golden bees as expressed in the recent discussions in Gleanings. As is often the case, the parties who disagree are talking about different things. There are two well-defined races or strains of golden bees which are frequently confused. One strain, in its purity, is very gentle, very lazy, raises little brood, but feeds the larvæ liberally. This is the race beloved of the queen-breeder. The queens are a beautiful golden in color, but usually rather small. The other strain is active and energetic, but usually vicious in temper. Both strains are generally good finishers of comb honey.

I tried for several years to get a good strain by crossing the two that have been mentioned, and succeeded in getting a few queens that were satisfactory. But their descendants mostly turned out common three-handers, or reverted to one or the other of the parent races. As I was not raising queens for sale I gave it up and returned to the common Italians.

The term "golden," as applied to bees, is a very indefinite one. The race can be kept true only by close inbreeding; and the closer they are inbred the more strikingly their defects appear. The wide difference in price between untested and tested queens as quoted by breeders of goldens shows the difficulty of breeding true.

I worked for one breeder of golden queens who had requeened every hive in his mating range with daughters of the same queen. The result was a very beautiful and gentle race, which made a fair showing in honey when no other bees were present for comparison. But in other apiaries, where his queens were introduced I find them invariably the poorest.

Newman, Ills.

C. F. Bender.

Broodless Cell-Building Colonies.

Mr. Pritchard advises A. W. Kuenzli, in Heads of Grain, July 15, that only capped brood be used in cell-starting colonies, and that it be used for only a very short time lest laying workers get to be a nuisance. Mr. Pritchard has had more experience than I, but I am convinced he is wrong. Why keep any brood at all in your cell-starter after first dequeening it? No better cells will be built. The colonies I started with this spring are still queenless, and still starting the finest cells I could want. Besides, my cell-starters are very good surplus-honey colonies, having yielded about 150 pounds of extracted honey this year.

I can't afford to have backward colonies all over the yard by dequeening and requeening later. I can't afford the fuss. If you will shake a frame of young bees into the starter every other day they will build the finest cells, laying workers will never trouble and they will develop a field force that will put up a lot of honey in the frames of the hive. Note that I am talking of starters,

not builders, as Mr. Kuenzli seems to have the two confused, also that I could name some of the biggest breeders in the country who use my plan. I am surprised that a company like the Roots, with their efficiency, could tolerate a lot of colonies dequeened and requeened in a few weeks to build up for winter only, giving no surplus.

Plainfield, Ill.

Kennith Hawkins.

Natural Swarming Without Much Increase

The honey season has been good here this year, but my bees did lots of swarming. When I got all the swarms I wanted for increase, I returned the swarms to the parent colonies; but in most instances they swarmed again the next day. Then I gave them to other colonies, which had swarmed a day or more before, and it worked fine. They stayed and worked just as hard as swarms hived in empty hives. At first I was afraid the bees would fight, but they never did.

I hived the swarms in store-boxes. Sometimes, when several swarmed at the same time, I had more than a bushel in one box. The next morning before sunrise I shake them out on cloth-covered boards, set slanting to the entrance of the colonies I want to strengthen. I give about 5 to 7 lbs. of bees to each colony.

When the swarming season was over, from 105 colonies, spring count, 97 were strong and 8 weak (those which swarmed last); and besides this, I had 32 new colonies. Until today I found only two of them queenless. I got about 8000 lbs. of comb honey.

I like this way of swarm control better than anything I have ever tried before, and I expect to practice it again next year. I would not try it in a season when there is not a good honey-flow; but when the bees don't get much honey in this locality they don't swarm much.

Fred W. Wenke.

Pender, Neb., Sept. 13.

Honey Saved My Baby's Life.

He was eight months old, and starving. I put honey in his milk.

We also gave it to our oldest daughter when she had typhoid fever. Milk, honey, and oatmeal, was all she ate for weeks.

I'm a great lover of honey. When available we use 800 to 1000 lbs. in our family. The keeping of a few bees is very little work, and we often sell that much.

Star, Okla.

Mrs. Ona Foliart.

How much corn syrup is necessary, when put in honey, to prevent it from becoming candied?

Ogden, Utah. Ogden Bee & Honey Co.

[We do not know of any one who is mixing corn syrup with honey to prevent granulation. Such a mixture could not be sold as honey under the national and various state food laws. The corn syrup would not accomplish the desired result without interfering with the flavor.—Ed.]

GLEANINGS FROM QUESTIONINGS

J. A. C., Ohio.—Is there any advantage in using acids in making sugar syrup for winter?

A. Yes and no. Some regard it as necessary, but we have fed up our bees without the use of acids in the syrups, for many years. The purpose of the acid is to invert the syrup, making it more like natural stores. If we could, by some artificial means, add protein or pollen, it would be better.

W. A. C., Ohio.—Why is bee-glue so abundant and sticky in the fall?

A. When bees have nothing to do they will gather gums and resins. It is their nature to chink up cracks and crevices in their hives to make them warm; therefore in the fall they will gather propolis and deposit it thruout the hive. New bee-glue is more sticky than old, and hence one notices it more in the fall than at other times of the year, simply because of its sticky nature. As the weather turns cold it hardens so that the frames are glued together. At such times it is necessary to use considerable smoke in separating the frames.

E. S. L., Jenkins, Ky.—What is honey-dew?

A. Honey-dew is a secretion from plant aphids. It is a sticky, sweet-tasting liquid that adheres to the leaves of the various kinds of trees on which the plant-lice work. It is something of a calamity when the bees gather very much of it, for, strictly speaking, it is not honey and cannot be sold as such. The flavor is often quite bitter, and the color cloudy and dark instead of clear. Some years much more of it is gathered than others. The year 1908 in many localities was noted for the large amount of honey-dew stored in the combs.

V. I. S., New York.—When is the best time to unite for winter?

A. The best way is to put the brood together in August and September; but if the matter has been delayed, the bees of two different out-apiaries may be united without any returning. Two weak colonies in the same yard side by side can be united by taking away one hive and placing the other between where the other two stood.

Ordinarily it is not practicable for beginners to unite bees of the same yard, on account of bees returning to the old stand; but it can be done. Wait till cold weather comes on after the first two or three frosts, and when all the flora is killed; then early in the morning place two clusters together. If the weather continues cool or cold for several days, not many bees will return to the old stand.

A. C. W., New York.—How old should a queen be to get the best results in wintering?

A. The younger the better. The one and two year old queens are apt to diminish egg-laying, sometimes stopping altogether during the latter part of August and fore part of September. The result is, their bees go into winter quarters too old to give the best results. It is desirable to have brood-rearing in August and September so that the hives will be filled with young bees in October and November. To that end young queens should be used, as they will lay right on. After breeding up in this way the colonies will need to be fed thru September and October with a syrup consisting of two parts of sugar to one of water. As the weather becomes cooler, the syrup should be made thicker—2½ parts of sugar to one of water.

A. B. C., Pennsylvania.—I have heard it said that windbreaks are very important for outdoor wintering. My bees are located on top of a hill where the wind strikes them from all directions. Will large quadruple winter cases with four inches of packing afford sufficient protection?

A. You had better by all means move the yard into a protected location 1½ miles from its present quarters. When cold weather comes on you can move the bees a distance of a hundred yards or so. We not only advise plenty of packing, but windbreaks in the form of trees, shrubbery, outbuildings, or natural barriers like a hill.

Placing an apiary at the foot of a hill without shrubbery does not always give satisfactory results. The wind will sometimes pass over the top of the hill, dive downward, and hit the hives with almost the same force as if they were on top of the hill.

X. Y. Z., New Jersey.—One of my colonies that was as gentle as kittens during the summer now seems to be very cross. What is the reason? The last time I handled them they stung my hands and clothing, and actually drove me out of the apiary.

A. If you handle the bees early in the morning, when the propolis is hard, and the frames come apart with a snap, you will be badly stung unless you use plenty of smoke, no matter what the strain of bees. Wait till the middle hours of the day, and use just enough smoke to keep the bees down. If you separate the frames when the propolis is soft you will have no trouble. Generally bees are crosser in the fall than at other times. A colony that has been gentle an entire season, even during summer, will sometimes be very ugly when the hive is opened. When there has been a heavy honey-flow, and it suddenly stops, all the bees in the yard will be more or less cross. It is advisable to avoid handling them more than is necessary before they get over their ill humor or disappointment, because the sudden flow of wealth (honey) has been suddenly cut off.

A. I. Root

OUR HOMES

Editor

Oh how I love thy law!—PSALM 119:97.

I was glad when they said unto me, Let us go into the house of the Lord.—PSALM 122:1.

Forsake not the assembling of yourselves together.—HEBREWS 10:25.

During our pastor's vacation a stranger occupied the pulpit. He also was on his vacation, and told a little of his experiences. A part of his sermon concerning church attendance took a great hold upon me. I have several times before mentioned that when I started out to serve the Lord, in answer to the question if I should be put down as a visitor to the Sunday-school or at our regular services I replied, after considering the matter briefly, "Brother Thompson, God helping me I am going to be a regular attendant at our Sunday-school the rest of my life." This statement was made before a pretty good-sized Bible-class; and I did not realize until afterward what it meant. But I did realize that it included attendance on the preaching service as well as the Sunday-school; and may the Lord be praised that I cannot now recall having failed to attend church at least *once* every Sunday, when it was reasonably possible to do so; and I cannot begin to tell you what a benefit it has been to me for the last forty or fifty years.

This being the case, you can readily imagine how it pains me to hear people excuse themselves from going to church. They are "too tired;" they "do not feel like it;" "the weather is too hot;" "the weather is too cold;" "it is too rainy to go out," and no end of other and similar excuses. Many times I have said to near and dear friends after the sermon was over, "O my dear friend, you don't know what you missed by being absent today. In fact, I should not be surprised if you have, by staying at home, missed one of the best sermons of your life," etc.

Here in Medina we have a talented, up-to-date young minister. His sermons are always listened to. If anybody ever went to sleep while he was preaching, I did not know it. We are also paying him what a good many people think is a pretty good salary; and yet these same persons who contribute, perhaps quite liberally, to the salary, voluntarily stay away. They do not hesitate to make business arrangements that keep them away on Sunday. Sometimes they tell me they attended some other church while away; but too often I find they did not go at all. Sometimes the whole family go on an outing, perhaps to their summer home on the lake. When they get

back I ask the question about church and Sunday-school. With the automobiles that are now so common there is but very little difficulty in finding a church and Sunday-school sufficiently near by here in Ohio. But again and again I am pained to hear they were too tired with the busy cares of the week, and that they wanted one whole day of rest. Now, I do not believe—at least I cannot readily agree to the statement—that anybody *rests* better by staying at home reading papers and magazines, dozing, etc., than by going to church at least once on Sunday. And then the children—a break in the Sunday-school lessons means to a child that it is not so very important that he should be on hand at Sunday-school.

Some of the excuses I have heard are that the church near by is behind the times. One party who went to church (I think a good deal because I urged it) said the poor minister was so much put out by seeing a crowd of "resorters" who came to his church that he became embarrassed and made awkward work of resuming his sermon; and they gave that as a reason for staying away. It made me think of a reason a young friend away up in Michigan gave for not attending the weekly prayer-meeting. He said it was all "run down," so there were not more than half a dozen in attendance, and that was *his* excuse for staying away. Now, in the case of the young minister who was embarrassed because a lot of town people came in unexpectedly, perhaps in the middle of his sermon, there was a splendid opportunity to grasp hold of the good points in his talk, and, after the sermon was over, take him by the hand and give him a little encouragement that you could do honestly. I never heard a sermon in my life that did not contain something I could indorse and congratulate the good brother for saying. In fact, I usually do find a place to say "amen" one or more times in almost every sermon. By the way, this reminds me that one excuse of some resorters was that the nearest church to their summer cottage was one where the sermon was preached in German. Well, my advice is to go and hear a sermon preached in a language you do not understand, rather than not go at all. You can listen to the singing and enjoy it, for, thank God, music is a "universal language" understood by every tribe and every nation. Yes, even the domestic animals appreciate and enjoy music, as you may have noticed.

Now, after this somewhat lengthy introduction, listen to the good brother while he tells you about some people who were too busy to attend church on Sunday, or perhaps "did not feel like going." By the way, my experience is that the time when I do not feel like going to church or prayer-meeting is the *very time* when it is most important — perhaps I should say most *vital*ly important—that I *should* go.

Here is the sermon, friends. I wonder if you can afford to say amen as you read it; and it would gladden my heart if you would put the amen on a postal card and sign your name to it. You can send a postal card also to the good pastor if you like.

SERMON PREACHED AT MEDINA, O., JULY 16, 1916,
BY REV. C. L. PARKER, OF THE KINSMAN-UNION
CONGREGATIONAL CHURCH, CLEVELAND.
"THE JOY OF THE CHRISTIAN."

Restore unto me the joy of thy salvation.—PSALM 51:12.

This is the first time I have ever been in this church, and yet I have known it for the past twenty-five years as a church that has been taking obscure and unknown young men for its ministers, and in a few years turning them out as men of national reputation and influence.

I have been helped and encouraged thru all these years of my ministry by a recital of your kindness and helpfulness to one young man, a former pastor, who here grew to be a man able to take a position of national service and influence.

I do not come to you with a message as helpful in return as you have been to me; but I am sure I can, in good Methodist fashion, relate an experience. Sometimes it does not take a great deal of brilliance to do that; and yet sometimes it may do a great deal of good.

Last week it was my privilege to spend the week end on a visit to an uncle, aunt, and cousin who live in a small town noted thru the past hundred years for its churches and religious life. On Sunday morning I began to inquire as to the probability of our going to church. My uncle said he was slightly deaf, and usually went to sleep in service, and so felt ashamed to go. My aunt and cousin said that they had been so busy thru the spring season that they had not had time to supply and provide themselves with suitable clothes to wear to church.

So I asked to be excused, and went to church alone. I decided to go with my eyes open, not as a critic, but to learn what I might of conditions in that town. This is what I saw: The nearest neighbor of my uncle's was hoeing in his garden; the next one was hauling hay; the third one was shaking out some hay that had evidently just been mown that morning. A little further on was a banker who had recently purchased a chicken-farm. He was working with his chickens when I went and when I returned. A little further on was another farmer picking cherries. At church there were twenty men and forty-two women.

The sermon was a very good one, but might have been preached at any time in the Christian era as well as on that particular occasion. Evidently in the preparation, purpose, or delivery of it, the preacher had no thought of the conditions which I had observed along the way to church.

But the text was a good one. It was a prayer to live by. I resolved to make it mine thru the week, "Restore unto me the joy of thy salvation."

Now, joy is somewhat comparative. We rejoice sometimes in severe trials, thanking God that our

lot is no worse. So I set out to find whether my life as a religious man compared favorably in its happiness with those whom I saw "too busy" to go to church on Sunday. What was the fruit of their lives? Was it superior to the happiness I am finding in the "joy of my salvation"?

I began to inquire, discovering these facts: The man who was hoeing in the garden lives alone. He had a sister in the same town who "lives alone." They both live that solitary life, for each other's mutual happiness. Another man was having trouble with his wife. A third one had lately failed in business. The banker was having a terrible row with his mother-in-law. It takes something besides a bank and a chicken-farm to make a man happy, particularly if he has a perennial quarrel with his mother-in-law. The other man has a drunken son. "Restore unto me the joy of thy salvation, O Lord." We never had property enough to quarrel over; but, thank God for a Christian sister to occupy our parent's home, so that it continues to be home to us all. Thank God for a wife who, by her Christian forbearance and self-control, contributes to the "joy of salvation" which she knows very well.

Thank God for seven sons, no one of whom has ever drank or smoked, who, we feel, are not only saved but safe, because they have Jesus Christ in their hearts. We have neither a "bank" nor a "chicken-farm," but we have a mother-in-law whose heart *Christ* has touched, and whose presence in our home is a benediction to us all.

All these are the "joys of salvation." I pray, "O God, make me as glad as I ought to be for thy salvation." But if I am going to pray this prayer I must be willing to do my part in a happy life. How may I live a happy life? What is my part? I recalled Alice Freeman Palmer's answer, probably familiar to us all. When challenged by a child of the North End of Boston to tell a company of children how to be happy, she told them to do three things every day: 1. Learn something good every day; 2. See something beautiful every day; 3. Do some kind act for somebody every day.

Time fails me to recount all my experience in carrying out these rules; but suffice it to say that they were exceedingly helpful. I learned something that will contribute lastingly to my happiness. From Dr. Worcester of "Psychotherapy" fame, I learned that nobody ever gets a roseate view of life between midnight and three o'clock in the morning, so I resolved not to castigate any of my delinquent church members during those hours when a Christian ought to be asleep. From Dr. Fosdick I learned that Jesus was not only a "man of sorrows," but he was also a most joyous person. The "joy of salvation" is the joy of dwelling with Christ, making him a resident of our homes, a companion in our journeyings, a partaker of all our experiences. But also these things included bearing fruit. Four times he speaks of this. Our lives are to find their type in your berry-fields, just now giving their bounty: your cherry-orchards, bearing their luscious fruit; your vineyards, fragrant in the autumn with the perfume of their vintage. Paul called Timothy and Titus and Philemon and the slave Onesimus "fruit" which he had from the Lord. So we have a joy and crown like Paul's by bearing fruit for him.

But, again, among the things that Jesus spoke unto his disciples for their joy was that they should love and be loved in return. "As the Father hath loved me, so have I loved you; continue ye in my love." The joy of Jesus' own life was in the fact that over him and round about him, like the very atmosphere he breathed, broad as the sky above him, was the heavenly Father's *boundless love*. It is this that Archbishop French meant when he said:

I say to thee, do thou repeat
To the first man thou mayest meet,
In lane, highway, or crowded street,

That he and we and all men move
Under a canopy of love
Broad as the blue sky above.

That doubt and trouble, fear and pain,
And anguish all are shadows vain,
That death itself shall not remain.

That weary deserts we may tread,
Thru dreary labyrinths may thread,
Thru dark ways underground be led.

Yet if one guide we will obey,
The dreariest path, the darkest way
Shall issue forth the heavenly day.

And we on divers shores now cast
Shall meet one perilous voyage past,
All in the Father's home at last.

And ere thou leave him say thou this—
One word more they only miss
The winning of that heavenly bliss.

Who will not count it true love
In which we all may live and move—
Blessing, not cursing, rules above?

And one thing further make him know,
That, to believe these things are so,
This firm faith never to forego.

In spite of all that seems at strife
With blessing and with cursing rife,
This is blessing, *this* is life.

The poet has the right of it. He lives most who loves most and noblest, and his love promotes his everlasting joy.

Restore unto me the joy of thy salvation; that is, restore unto me a consciousness of thy presence—power to bear fruit unto him, and a love spirit that loves itself in seeking to love as he loved.

I was pretty sure when I listened to it that the good brother could not write it out exactly as he gave it. If I am correct about it he had no notes, but gave it off-hand. My recollection is that when speaking of the banker with his chicken-farm he said something like this:

"Brethren, a bank and a chicken-farm, no matter how extensive, do not make a man happy who is in a jangle with his mother-in-law."

May God be blessed for the above message; and may it awaken a lot of the readers of GLEANINGS to the importance of standing by the pastor of your church, giving him encouragement and a helping hand as he delivers his message from the great Father of us all.

"WHAT WOULD JESUS DO?"

Dear Mr. Root:—In GLEANINGS for January 1 you publish a letter by Mr. Sheldon, author of "In His Steps," answering President Wilson's challenge that any man who differs with him on the question of preparedness shall make it clear "how far and in what way they are interested in making the permanent interests of the country safe against disturbance."

If I understand Mr. Sheldon's position he differs with the president, first, because he "has not named a single country that threatens us with war." In

spite of such being the case, is it not reasonable to assume that, when he adopts any course that concerns the welfare of the country, he must have strong and sufficient reason for doing so—especially since he has used all the acumen of a trained, scholarly, practical mind to avert war, and with a will of iron and a noble patience and steadfastness under recrimination, sneers, and ridicule, has succeeded in keeping us out of an imbroglio with Mexico? Events have justified his far-sighted policy with regard to our neighbor. We find his judgment was good when he opposed intervention; can we not trust him when his decision is for preparedness in self-defense?

The fact that we are in friendly relations with all the world now is no guarantee that we shall continue so, and doubtless the President has information which it would be neither politic nor safe to give to the general public with hyphenated spies on every side ready and eager to frustrate the plans of our government. Would it not be folly for our President to name any single nation whose designs he may have reason to suspect, however friendly it might appear at present, until such a power had given proof of its intentions?

Mr. Sheldon states that the money asked of the people (for their own defense) for warships and other necessary means of defense would answer the same purpose if expended on education, missionaries, and prohibition. It takes years to educate the people, Christianize the country, and carry thru the prohibition measure. Suppose while this money, instead of putting the country in a state of defense, were used for these purposes, our land should be invaded. Would education, religion, or sobriety repel the invaders?

Several years before the present European war broke out, a writer of one of the foreign powers published a book stating that the next war (this present war) would be fought along the lines that it has followed, and would include in its plans an invasion of the United States.

Mr. Sheldon speaks of "Christianizing Europe after the great war is over." The great war is not over, and no man can tell where it will spread; moreover, European nations consider themselves Christianized already. Does not the kaiser tell his troops continually that God is with them, and will give them the victory? As to the means he proposes, what does any reasonable being suppose would be the reception of "a party of our best young people sent over" to any one of the European powers for the purpose of Christianizing them? Yet this is Mr. Sheldon's practical (?) plan after the war is over. Even Mr. Ford, in his good ship "Fol-de-rol," is more practical—enough so, at least, to try to do something now when it is most needed.

As for our country's self-defense being "contrary to the spirit of Christianity," and as to what Jesus would do now, not after the war is over, with all the disasters it may bring even upon us, this is what I believe the Master would do: He would say: "Under the old dispensation my Father helped his people in their wars against the heathen that the oracles of God might be preserved—the oracles that foretold my coming and the regeneration of the world. I am come. In this land that I have given you, where worship in freedom the oppressed and enslaved of all nations; in this land where spirit may expand and rise to noble heights under free government; where hearts throb quickest in sympathy, and full hands are held out most readily to those suffering under the world's great disasters, you confess me in word and deed; this land defend. Let no barbarous flag proclaiming Old World standards of injustice and slavery supplant its star-spangled banner which leads all nations in freedom and brotherly love. Defend it; and he that loses his life shall find it."

Canutillo, Tex., Jan. 31. MRS. O. N. TURNER.

HIGH-PRESSURE GARDENING

CORN, ALFALFA, COWS, SWINE, AND "BEES."

We clip the following from the *Alfalfa Journal*:

AN IDEAL FARMING COMBINATION.

Did you ever try to figure out what the ideal crop and livestock combination would be to make you the most profit? Here is a suggestion: Corn, alfalfa, cows, swine, and bees.

Figure on this proposition a little and you will see that the corn and alfalfa will supply all of the feed necessary for the cows and for the swine. Put part of the corn into the silo, husk part of it, and grind it for feed. Use the alfalfa hay for the cows and also for the hogs. Use the pasture for both kinds of stock, but, of course, be careful in pasturing the cows.

To keep the soil in proper condition, about every five years switch the crops. Plow up the alfalfa and plant corn. Then sow alfalfa on the corn land. Wonderful yields will be the result, and real prosperity will be yours.

The bees are a side line, raised much too little. They will thrive on the alfalfa field. They board themselves, cost nothing, but make you good profit. There is always a good demand for honey, and honey is a mighty good food to use on your own table. Think it over carefully, this ideal combination: Corn, alfalfa, cows, swine, and bees.

The part of the above that hits us particularly is bees; and just now I wish to say something about alfalfa honey. Last evening I saw on Mr. Calvert's desk about the whitest and most beautiful comb honey I ever saw, and I started to take a section over to Mrs. Root; but before I got there I had a mishap, and a section was crushed. Mrs. Root stood out on the porch, and I called to her to get a dinner-plate and spoon in "double-quick" time. Well, the honey was so thick, and Mrs. Root is so "spry" (even if she was 75 years old on the 12th day of August) that we got the greater part of the honey before any could be wasted. Altho the thermometer on the porch indicated close to 90, this beautiful white honey, almost water-white, was so thick that it hardly ran out of the spoon when turned upside down, and the taste was simply delicious. Mr. Calvert thought the source was alfalfa and sweet clover mixed. And, by the way, I have just made a new discovery. Good thick honey is ever so much better with *oatmeal* than any sugar ever invented. My breakfast was principally oatmeal cooked a long while so as to be digestible; plenty of cream, and this delicious alfalfa honey. To my great surprise my strength and endurance held out "amazingly," clear up to dinnertime. Then I had some more of the same honey for dinner—all I wanted; and now, altho it is almost suppertime, I am feeling fine, even if I have not had my usual outdoor exercise.

The moral to all the above is, have some

alfalfa, if you have not any already, and have some bees if you have none already; and just now I am reminded that there is something else I had with my delicious breakfast. It was a cupful of milk right out of the refrigerator. You may have your tea and coffee, and everything else along the line of drinks; but give me some good cold milk together with oatmeal and honey.

"THE RICHEST BODY OF LAND UNDER CULTIVATION IN AMERICA."

Our readers will naturally wonder *where* this wonderful piece of fertility is located. Well, it is claimed to be down in Florida. Now, please do not imagine that *all* Florida is that way; for no end of people have gone to Florida with fond anticipations in the way of growing crops, and have been grievously disappointed. The clipping below, from the Jacksonville *Times-Union*, tells you all I know about it:

Ocala, a town of 5,000 or 6,000 progressive citizens, is very properly termed the center of the agricultural and stock-raising section in Florida.

What is, without doubt, the richest body of land under cultivation in America is located about fifteen miles southeast of Ocala, in the abandoned river-bed of the Oklawaha River. This property is known as the Young & Ford farm, personally owned by Messrs. Young & Ford, and is for the first time this year planted on a large scale to corn. An elbow in the course of the river has made it possible for this tract of land to be drained. A canal has been cut from each point of the elbow, and the river course diverted into this canal. The old river course now serves as a drainage for these lands, and the lateral ditches are drained into the old river-bed. A dike is formed at one end, and not only drainage obtained, but by the manipulation of the dike during dry weather water can be placed back on the land for irrigation purposes.

The soil is simply the decayed vegetation of centuries. It ranges from twenty to forty feet deep of solid muck. When drained it is accessible for cultivation with either mules and plows or tractors, and it is sufficiently porous to take off rainfall without discomfort or interference with the crops.

Last year from four and one-half acres planted to corn an average yield of 142 bushels of corn per acre was obtained without the application of any fertilizer. This year 1100 acres is solidly planted to corn which averages over the entire acreage better than 100 bushels to the acre, all without any commercial fertilizer. It is a sight to behold! The cornstalks stand in almost solid mass from twelve to fifteen feet in height, and the quality of the corn is all that could be desired.

On page 755, Aug. 15, I told you of a 500-acre cornfield that they thought would grow 45 bushels to the acre; but the above clipping discounts that cornfield more than two to one. Just think of it—1100 acres growing more than 100 bushels to the acre! As the locality is not very far from our Florida home, I will try to get some further particulars in regard to it later on.

THE CORN CROP IN FLORIDA.

It sounds a little funny to talk about Florida getting a good corn crop and shipping it up north instead of being obliged to send to Ohio or away off west to have corn to feed to the chickens. On page 755, Aug. 15, I spoke about the possibilities of corn-growing in Florida. Below is a clipping from the Jacksonville *Times-Union*:

FLORIDA BECOMES A GRAIN-EXPORTING STATE THIS FALL.

For the first time in history, Florida is to become a grain-exporting state this fall. The corn crop of Florida this year is larger than ever before. From the crop reports it is believed that several thousands of bushels of corn will be sent north and east this fall.

SELECTING EARS OF SEED CORN FOR NEXT YEAR'S PLANTING.

For several years past I have made mention of the way I pick out desirable ears in our cornfield. I have been in the habit of picking the ears as soon as I could find desirable ones sufficiently hard and mature so the husks would be dry; and by selecting the first to mature, season after season, I have succeeded in shortening the growing season quite a good deal. I was wondering whether I should keep on doing this. I have always been in the habit of getting ears that were the first to hang their tips downward; and while wondering whether I should continue doing this I wrote to our

Ohio Experiment Station. Below is their reply:

Mr. A. I. Root:—Director Thorne has handed me your letter of Sept. 14. Regarding the selection of seed corn, let me say that it is an advantage to choose ears that point downward at the tip. They are much more likely to furnish good sound seed, for the water will run off the ear instead of endangering it. Ordinarily one should select the earlier-maturing ears. The exception would be in the case of a very early variety that one wanted to render a little later. C. G. WILLIAMS, Chief.

Wooster, O., Sept. 15.

Perhaps I should explain again that, instead of getting my choice seed from a stalk that was the only one in the hill, I made the selection of a good ear where there were three or four stalks in a hill, in order to get a strain that would make a good big growth of ear in spite of competition. Then I tried to select ears with regular even rows instead of those with rows running zigzag, criss-cross, etc. I also used the ears having the corn clear down over the tip, etc. As a result, after having just traveled in the cars and in automobiles pretty well across the state of Ohio from north to south I have not found a cornfield that I thought equaled ours. Perhaps, however, I should add that, in getting this beautiful field of corn, we plowed under a pretty rank stand of sweet clover. It is another score for sweet clover for bringing up the fertility of the land.

POULTRY DEPARTMENT

SHIPPING CHICKENS BY EXPRESS.

On page 375, May 1, I mentioned sending nine chicks, three weeks old, and six one week old, from Bradentown, Fla., to Medina, for 69 cents. I have since then thought best to tell you how I did it, and have every chick come thru bright and lively. The picture on p. 879, last issue, shows how I arranged a common market-basket so as to make a light package.

Had the chicks been only a day old they could have been sent in a much lighter package, as no feed nor water was needed; but the three that were three weeks old were pretty lively; and as the weather was liable to be cool, especially at night, I put a division-board in the middle of the basket, and had their sleeping-room padded with cotton batting all around and overhead. If they got too warm in the middle of the day they could go over into the "dining-room." A large-mouthed bottle I planned to hold water enough; and their feed, mostly wheat, was scattered about the basket, with sawdust to absorb their droppings. One reason

why the express charge was so low was the lightness of the package. I have before mentioned that, as it took *four* days instead of two or three, as I had planned, they were out of both feed and water; and they were so hungry that they bit at my fingers when I let them out; but some warm bread and milk soon set them to rejoicing.

When my nine chickens got large enough I found there was one rooster among the three oldest ones, and one among the six younger ones. As a matter of course they soon began to quarrel. When the younger one was nearly four months old I put him in the same basket (taking out the partition), and sent it back to Bradentown. Well, the charge this time was 85 cents; but I suppose it would have been cheaper had I not put the value of ten dollars on the shipping-tag. The letter below from friend Abbott tells us in what condition they arrived.

Dear Mr. Root:—The cockerel came thru in nice shape. He is "as fine as silk." I have him in a small yard with one hen for company. I am feeding him oats, bran, and wheat, with a very little corn

nights. I will be very careful that nothing happens to him. I hope the pullets and the other rooster are as good as he is.

As to my bunch (about 500 pullets) I am keeping my head above water yet, but it gives me a chill sometimes when I think if they should stop laying and keep right on *eating*. When it comes to that I shall have to feed them honey, of which I shall have 3000 lbs. or more.

Ella says, "Everything you get you feed to those old hens;" but then, we *all* have to eat.

Bradentown, Fla., Aug. 14. D. W. ABBOTT.

Under date of Sept. 1, friend Abbott writes as follows:

Mr. A. I. Root:—The rooster is doing finely. I am still getting eggs enough to pay expenses. The last batch of chicks, hatched in December, are commencing to lay.

Bradentown, Fla., Sept. 1. D. W. ABBOTT.

I used a pint Mason fruit-jar to hold the water for the young rooster, and I fixed a little feed-box across one end of the basket for the feed. Some poultry-netting with one-inch mesh, about the size of the basket, was put clear up under the handles; and

then a strip of cotton cloth connected the edge of the basket to the poultry-netting. To cover the ragged edges of the poultry-netting, a stout wire was put around the outside edge.

DEATH OF "LADY EGLANTINE."

We clip the following from the Cleveland Press:

POULTRY WONDER IS DEAD.

GREENSBORO, Md., Sept. 13.—Lady Eglantine, the wonder of the poultry world, is dead. The single-comb White Leghorn laid 315 eggs in her pullet year. She won every prize for which she competed.

This is sad news indeed, not only for the owner but for the poultry world at large. I shall think more of my nine relatives than ever before. And, by the way, is it not possible that Lady Eglantine would have lived longer if she had been "turned out to grass" instead of being petted and fed "Pullman-car" style?

TEMPERANCE

ARE YOU READY TO "STAND UP AND BE COUNTED"?

I think I have said one or more times, do not vote for any man to be put in any office who is not ready to stand up and be counted, and be counted on the side that demands the death of King Alcohol. Election day is not far off, and I am reminded of the matter by the opening article (given below) in the September number of *Good Health*.

PASSING OF A GREAT DELUSION.

King Alcohol is dying.

After a desolating reign of many thousands of years this greatest of all rulers of men has come to his end, and, in the words of Holy Writ, "None shall help him."

For ages the whole world lay in bondage under this merciless tyrant, which trampled to destruction the souls and bodies of men, women, and little children, desecrated every holy shrine of human affection and devotion, paralyzed every noble sentiment and aspiration, transformed the divinest impulses into beastliness, promoted every vice and every crime, every form of disease and depravity, daubed a blot upon the brain of its deluded victims, and filled the world with woe, degeneracy, and despair.

For half a century this diabolical ruler has shown symptoms of senility, and in recent years the trembling hands and tottering limbs of the old monster have shown that his days were numbered.

The magic spell of alcohol is gone, never to return.

The brilliant sunlight of modern science has driven away the miasmatic fogs of error and ignorance and the alcohol delusion is exposed as a ghastly festering skeleton, dragged out of its closet.

For ages alcohol has been lauded as a "good creature of God." Today everybody knows it as a demon incarnate, without one redeeming quality.

Medical authorities for ages commended alcohol as a stimulant, an elixir of life; today the united voice of half a million medical men throut the civilized world declares alcohol to be a narcotic, a vital de-

pressant of no use in shock or weakness, but the very opposite.

The whisky-bottle no longer figures largely in the first-aid outfit, except by its absence.

This magic philter, which has made of millions of domestic paradises veritable hells, peopled with demons, has lost its "spell" over the minds of men. The hoary-headed delusion has passed away, and King Alcohol is tottering into his grave.

Alcohol is already buried in twelve great states that have placed prohibition laws upon their statute-books. A score of other states are preparing to do the same.

In the present presidential campaign the alcohol question looms up larger than ever. The Progressive party put into its platform a prohibition plank. The Prohibition party has nominated Ex-Governor Hanly, of Indiana, to head its ticket, and will make a strong campaign.

Every man and every woman who casts a vote this fall should vote for the prohibition candidate for president if in sympathy with the prohibition movement, no matter how he may vote on state or local issues. This is an opportunity for the foes of alcohol to stand up and be counted. A million votes for prohibition would compel Congress to make the question a national issue at once. If you are a strong partisan in politics, a Republican or a Democrat, then *pair for prohibition*. You will thus inscribe your name among the friends of prohibition and will help in the good work of burying the stinking carcass of old Bacchus—and without impairing your favorite party interests.

Pair for prohibition!

SCANDINAVIANS AND THE LIQUOR TRAFFIC.

Mr. Roy A. Thompson, a beekeeper of Cedar Edge, Col., sends us the clipping below, but does not tell what paper it comes from:

Richard Jones, a Minnesota state senator, and very prominent in union labor circles, made a speech the other night before the Scandinavian Socialist

Club at Superior, Wis. In the course of his address, speaking about the claim that prohibition would throw many men out of employment, Mr. Jones said:

"We are begged not to vote men out of employment; but if a group of men are employed in a business which is destructive to society I would vote those men out of that employment and into something valuable to themselves and their fellowmen. I should like to have a chance to vote 5,000,000 men in Europe out of their present jobs. If this principle applies in one case, why not in another? To advocate peace in Europe would throw thousands of workmen in America who are engaged in the manufacture of munitions of war out of their present employment; but thousands of trade unionists and Socialists are today doing all in their power to spread anti-militaristic propaganda among their fellow-workers."

What would be said of the munitions manufacturer who argued against stopping the war because it would throw so many men out of employment?

What would be said of the workers in munitions factories who would plead for the carnage to continue in order that they might keep their present lucrative jobs?

And yet that is the cry that is raised in behalf of the gin-mills. If the poisoning of the people is stopped, if the saloons don't continue their work of debauchery and their bloody course, those who make profit thereby will have to seek other employment.

This is the argument that has been urged against the abolishment of every infamy that has existed since the foundation of the world.

It is a tough traffic that can give no better reason for its existence than that those who make money out of it would lose some profit by its abolishment!

"BOOZE" AND THE FARM PAPERS.

If there is a farm paper that takes the side of the liquor party, or even accepts a liquor advertisement, I have yet to see it among all our exchanges. Just now the *Country Gentleman* comes out with a suggestive illustrated article. Underneath a couple of pictures we read:

"It is a heap better, and less costly in the long run, to buy gasoline than rum."

In one picture you see a farmer bringing in a can of booze. Besides the wife there is not only a baby in her arms, but frightened children clinging to the skirts of her dress. In the companion picture the farmer has bought an auto. The wife and children are loaded up in it, while the farmer with long strides brings in a can of gasoline. They are a happy crowd, and the great contrast with the other picture points a mighty moral. By the way, I have been for days past watching the boys and girls, and men and women, as they enjoy their automobile rides during this sultry August weather. It is true they raise a dust more or less: but, oh dear me! what is a little dust, or a good lot of it, compared to seeing the farmer's money go for booze instead of for an automobile? Some one may suggest that the automobile costs more than the booze; but I am not so sure of that. When you come to count up the widespread losses

as the effects of the booze, such as poor-houses, lunatic-asylums, crippled babies, etc., the cost of the automobile is *nowhere*. Just see the figures that are being paraded just now in regard to the cost of intoxicants thruout the land.

Just a word more about the dust. During the springtime we had the road sprinkled in front of our bungalow; but something happened to the waterworks, and Mrs. Root put in a plea for an *oiled road*. One trouble with sprinkling is that, during the hot rainless season, the water lasts only a few hours; but the oiled road we have now is a "thing of beauty and a joy"—until it needs another coat of oil; and the outlook now is that the oil is going to be cheaper than the water sprinkling in the end. I thank God for the good time in sight when all mankind will have water to drink instead of booze. I thank him, too, for the oil to oil our roads, and the gasoline to take the place of booze to run our automobiles, not forgetting the beautiful and glorious means of transportation we now enjoy, without overtasking the tired horses when the weather is too hot and sultry for anything but an automobile.

BOOZE, AND ITS EFFECTS ON WOUNDED SOLDIERS.

We clip the following from a sheet dated Aug. 7, put out by the Methodist Board of Temperance:

The *Vindicator* publishes a statement by the greatest woman lawyer of France, Madam Maria Verone. In her address she declared that France had been robbed of the lives of vast numbers of its soldiers by drink. She declared it to be the invariable experience of physicians that wounds which scarcely affected normally healthy men were deadly in the case of drinkers. In conclusion she said:

"We will no longer tolerate from our parliamentarians the want of courage and initiative they have always hitherto shown in handling this drink problem. Bereaved mothers and widows from behind their mourning-veils cry to you to prohibit alcohol as a beverage. If you don't yield to them, they will turn you out at the next election."

Good for the women of France! May God grant that *they*, like the good women of the United States, may soon dictate what sort of men shall fill important offices for the nation.

In line with the above is the following from the pen of Wm. Jennings Bryan:

THE MOTHER ARGUMENT.

The strongest argument in favor of woman suffrage is the mother argument. I love my children—as much, I think, as a father can; but I am not in the same class with my wife. I do not put any father in the same class with the mother in love for the child. If you would know why the mother's love for a child is the sweetest, tenderest, most lasting thing in the world, you will find the explanation in the Bible: "Where your treasures are, there will your heart be also." The child is the treasure of

the mother; she invests her life in her child. When the mother of the Graceli was asked: "Where are your jewels?" she pointed to her sons. The mother's life trembles in the balance at the child's birth, and for years it is the object of her constant care. She expends upon it her nervous force and energy; she endows it with the wealth of her love. She dreams of what it is to do and be—and, oh, if a mother's dreams only came true, what a different world this world would be! The most pathetic struggle that this earth knows is not the struggle between armed men upon the battlefield; it is the struggle of a mother to save her child when wicked men set traps for it and lay snares for it. And as long as the ballot is given to those who conspire to rob the home of a child it is not fair—no one can believe it fair—to tie a mother's hands while she is trying to protect her home and save her child. If there is such a thing as justice, surely a mother has a just claim to a voice in shaping the environment that may determine whether her child will realize her hopes or bring her gray hairs in sorrow to the grave. Because God has planted in every human heart a sense of justice, and because the mother argument makes an irresistible appeal to this universal sense, it will finally batter down all opposition and open woman's pathway to the polls.

"GOD'S KINGDOM COMING."

We take pleasure in clipping the following from the *Union Signal*. I do not mean that I take pleasure in seeing anybody fail in business; but I take pleasure in the above because I am sure that the liquor people will be *better* and *happier* in turning their attention to some other source of livelihood.

SALOONS FOR SALE IN PHILADELPHIA.

The Philadelphia correspondent of *Bonfort's Wine and Spirit Circular* admits that "very little new business is being done or looked for" in his city, but ascribes the dullness to the hot season, etc. However, the real-estate men who handle saloon properties say they have been loaded down with commissions to sell during the last few months. "The *North American* states that two hundred and forty saloonkeepers of the city are ready to "quit business before the tidal temperance wave which is sweeping the country puts them out," and that more than a thousand places thruout the state are likewise on the ragged edge, seeking a purchaser who is willing to risk his money on the chance that the whisky trust and the brewers may save the day for them.

IN KANSAS 32 COUNTIES HAVE ABANDONED THEIR PUBLIC POOR-FARM.

We clip the following from the *Christian Herald* in regard to Kansas:

Forty counties in the state did not send a single prisoner to the state penitentiary last year. In one county, the jail, which had been empty for two years, is now used as a corn-crib. Poverty and illiteracy are disappearing. Thirty-two counties have abandoned their public poor-farms, and in the whole state less than nine hundred paupers are being cared for in county institutions. The bigger part of the criminal cases tried in the state courts is due to the influx of liquor from other states, and in most cases the culprits are not Kansas citizens.

Kansas wants the whole Union to know the truth about these things. It has chosen a decent road for its people to travel, and it intends to go right along on this new and clean highway. Governor Capper's address in pamphlet form should be circulated and read wherever there is a liquor question. It is one

of the most convincing temperance arguments we have ever seen.

It seems that Gov. Capper does not propose to let the liquor people go unanswered in their desperate efforts to find some fault with Kansas.

A DRUNKEN CHAUFFEUR, AND HOW IT WORKS.

We clip the following from the *Kansas City Star*:

WHEN WHISKY SITS AT THE WHEEL.

The three young men who rode in the death-car Saturday night that ran into the crowd of young people at Fifteenth and Troost have been captured.

But the real *driver* of the car is still at liberty.

It was whisky that sat at the wheel and committed the murder. It was whisky that sent the car on its mad way after two of the young folks had been killed and others injured.

Whisky still is free and unrestrained. It was out bright and early this morning looking for other young men to act as its agents and ride with it on another death mission.

My impression is that not a few of the accidents from automobiles every day are caused by a drunken or drinking chauffeur. Right near our own town of Medina two automobiles ran into each other "head on" at a good speed. We were told the injuries were so great that there was but little hope of saving the life of at least one of the parties; but we do not know how it came out. I have since been informed that the parties in one of the automobiles, if not in both, stopped at a "roadhouse" saloon, just before the accident, and that the whole trouble was due to drink; but, as often happens, the friends or relatives of the injured parties took pains to have the *real* cause kept out of the papers.

"A STANDING ARMY (?) MADE UP OF INDIVIDUALS SUFFERING FROM PARALYSIS."

Dr. R. H. Bishop, Commissioner of Health for the city of Cleveland, in an article in regard to pneumonia, in the *Plain Dealer*, writes as follows:

Alcohol is another important predisposing cause of pneumonia. It is the sum total of effect of alcohol on all the cells of the body that gives one the feeling produced by alcohol.

The cells, which represent the standing army of the body, are more or less paralyzed. Their efficiency is partially destroyed and the condition is similar to what would occur if the standing army of the nation were made up entirely of individuals suffering from paralysis.

Is this overstated or overdrawn? The above reminds me of the time when Mrs. Root was near death from this same pneumonia. The doctor and nurses declared she would have to have brandy to "pull her thru." But she refused to take it, and I backed her up, and she is alive and well today. Who can say she would have been alive and well if she had followed the doctor's orders?

YOUR LAST CHANCE

to get Queens of H. G. Quirin for this season, as it now is time to unite for winter, so hurry in your orders.

For prices see previous issue of Gleanings.

Honey for sale now in any quantity.

H. G. Quirin-the-Queen-breeder, Bellevue, Ohio

\$3.00 CARNIOLAN QUEENS for \$1.00 EACH

To reduce our stock quickly we offer fine "Select Tested" queens raised this season, worth \$3.00 each, for \$1.00 each. Only about 100 of these choice queens for sale.

Now is your chance to get a fine breeder very cheap. Safe arrival

guaranteed. Untested queens all sold for this season.

F. A. LOCKHART & COMPANY,

LAKE GEORGE, NEW YORK

Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS

That fill the super quick with honey nice and thick. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, 1, \$1; 6, \$5; 12, \$9; 100, \$65. Select untested, 1, \$1.25; 6, \$6; 12, \$11; 100, \$75. Safe arrival and satisfaction guaranteed I am now filling orders by return mail.

Circular free
Queen-breeder

J. P. MOORE,
Route 1, MORGAN, KY.

Please Notice Change of Prices of Leininger's Strain of Italians

We will sell untested Italian queens at 75 cts. each; six, \$4.50; tested, one year old, at 80 cts. each; six, \$4.80; tested, young, \$1.25; six, \$6.50. Breeders, \$10 each. We guarantee that all queens will reach you in good condition, to be purely mated, and give satisfaction

Fred S. Leininger & Son . . . Delphos, Ohio

Three-band ITALIAN QUEENS

bred from imported mothers, the best in the world; good honey-gatherers and very gentle. One for 50 cts., \$6.00 per dozen. Pure mating, safe delivery, and perfect satisfaction guaranteed. **L. L. FOREHAND, FORT DEPOSIT, ALA.**



Queens--Queens--Queens.

tested, 60 cts.; tested, \$1.00; select tested, \$1.50 each. We have been breeding queens for more than 25 years. We guarantee safe arrival, no disease, and every one purely mated.

W. J. FOREHAND & SONS

We are breeding from the best three-

band Italian stock. Untested, 50 cts.; select un-

FORT DEPOSIT, ALABAMA



WARDELL'S ITALIANS

Descendents from the Famous Root \$200 Queen

I was head queen-breeder for The A. I. Root Co. for a number of years, and during that time I originated the famous \$200 ROOT BREEDER whose stock has gone the world around. These bees for GENTLENESS, GENERAL VIGOR, and HONEY-GATHERING qualities have ESTABLISHED A REPUTATION. I have been for years developing and perfecting this same strain. While my prices may be higher than some others, my queens are cheap in comparison with their value.

Untested . . . September and October, \$1.00
Select Untested . . . " " " 1.25

Tested . . . September and October, \$2.00
Select Tested . . . " " " 3.00

Our supply of untested and select untested is likely to be small after October.

Prompt delivery assured.
Address all orders to

F. J. Wardell, Uhrichsville, Ohio

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and should not exceed five lines; and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

A No. 1 clover in 120-lb. cases at 8 cts. Sample 10 cts. H. C. LEE, Brooksville, Ky.

FOR SALE.—White-clover honey, both comb and extracted. W. M. PEACOCK, Mapleton, Ia.

FOR SALE.—White-clover comb honey; extracted in 60-lb. cans. HENRY HETTEL, Marine, Ill.

In new 60-lb. cans, clover honey, 8 cts.; buckwheat, 7. G. H. ADAMS, box 184, Schenectady, N. Y.

A1 clover—amber-blend honey in new 60-lb. cans, at 8 cts. VAN WYNGARDEN BROS., Hebron, Ind.

FOR SALE.—Fine extracted buckwheat honey, \$3 per case of 118 lbs. net. LEROY LLOYD, Caywood, N. Y.

Buckwheat honey, comb and extracted; also clover extracted, 60-lb. cans. E. L. LANE, Trumansburg, N. Y.

FOR SALE.—White-clover extracted honey in 60-lb. cans, two cans to a case. ARTHUR NORBERG, Spring Valley, Ill.

Well-ripened clover and buckwheat honey in new 60-lb. cans—two cans to the case. B. B. COGGSHALL, Groton, N. Y.

Light-amber extracted honey, 60-lb. cans, at 6 cts. per lb., f. o. b. cars. Sample, 10 cts. C. R. ALLEN, Vicksburg, Miss.

Choice new-crop white-clover extracted honey in new 60-lb. tin cans, the bargain of the season; sample, 10 cts. D. R. TOWNSEND, Northstar, Mich.

FOR SALE.—A1 sweet-clover honey in 60-lb. cans, two cans to a case, 7½ cts. per lb., f. o. b. cars. JOE C. WEAVER, Cochrane, Ala.

FOR SALE.—Clover honey of finest quality in new 60-lb. cans at 8½ cts. per lb. Also fancy and No. 1 clover comb honey, 4¼ x 1½ sections. MARTIN CARSMOE, Ruthven, Iowa.

FOR SALE.—Fancy white-clover honey; extracted, 8 cts. by the case of 120 lbs. Also same in 2-lb. friction-top cans, 24 cans to the case, 10 cts. f. o. b. Falmouth, Ky. VIRGIL WEAVER.

FOR SALE.—Extra quality white-clover honey, 8½ cts. by the case of two 60-lb. cans. Ten or more cases, 8 cts. Six-pound can, postpaid, in second zone \$1.00. EARL KULISON, Rt. 1, Amsterdam, N. Y.

FOR SALE.—Raspberry, basswood, No. 1 white comb, \$3.00 per case; fancy, \$3.25; 24 Danz. sections to case; extracted, 120-lb. cases, 9 cts. per lb. W. A. LATSHAW Co., Clarion, Mich.

No. 1 white comb, \$3.50 per case; No. 2, \$3.00; No. 1, fall comb, \$3.00; No. 2, \$2.50; 24 sections to case; extracted in 60-lb. cans; clover, 9 cts.; amber, 8 cts. Amber in pails, 6 ten-pound or 12 five-pound to case at \$6.00 per case. H. G. QUIRIN, Bellevue, O.

RASPBERRY HONEY.—Thick, rich, and delicious. Put up for sale in 60-lb. tin cans. Price \$6.00 a can. Sample by mail for 10 cts., which may be applied on any order sent for honey. Write for price on large lots. ELMER HUTCHINSON, Rt. 2, Lake City, Mich.

FOR SALE.—5000 lbs. fancy extracted white-clover honey; also a quantity of extracted heartsease and Spanish-needle blend, put up in barrels of about 550 lbs. net, and new 60-lb. cans. Honey is thoroughly ripened, and there is none better on the market. Prices reasonable. Sample, 10 cts.

EMIL J. BAXTER, Nauvoo, Hancock Co., Ill.

HONEY AND WAX WANTED

WANTED.—Fancy clover honey in 4 x 5 sections. L. E. FRENIER Co., Rutland, Vt.

WANTED.—Comb, extracted honey, honey-dew, and beeswax. W. A. LATSHAW Co., Clarion, Mich.

WANTED.—Extracted honey in any lots. Send sample. THE HONEY KING, Mahanomen, Minn.—54982

WANTED.—Comb and extracted honey, in car lots and less carlots. J. E. HARRIS, Morristown, Tenn.

Beeswax bought and sold. STROHMMEYER & ARPE Co., 139 Franklin St., New York.

WANTED.—Comb honey. What have you to offer? R. V. STROUT, 325 11th St., S. W., Washington, D. C.

WANTED.—Comb honey, fancy and No. 1 white clover; also buckwheat comb; glassed sections preferred. HOFFMAN & HAUCK, Richmond Hill, N. Y.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.

SUPERIOR HONEY Co., Ogden, Utah.

FOR SALE

White-blooming sweet clover, only 9 cts. per lb. GEORGE M. CALLEN, Selma, Ala.

Get our new Rubber Stamp and Label Catalog. ACME PRINTING Co., Medina, Ohio.

HONEY LABELS.—Most attractive designs. Catalog free. EASTERN LABEL Co., Clintonville, Ct.

SEND TODAY for samples of latest Honey Labels. LIBERTY PUB. Co., Sta. D, box 4-E, Cleveland, Ohio.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. HEALY, Mayaguez, Porto Rico.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. WHITE MFG. Co., Greenville, Tex.

FOR SALE.—Cedar or pine dovetailed hives, also full line of supplies, including Dadant's foundation. Write for catalog. A. E. BURDICK, Sunnyside, Wash.

FOR SALE.—Ten Woodman double-wall hives, with deep cover, chaff-tray, no frames, 10-frame size; hive has been used four seasons; one coat of paint will make them as good as new. Will sell the ten for \$8.00. EARL L. BAKER, Star City, Mich.

FOR SALE.—500 Page Kenke comb-honey supers, 4¼x4¼x1, ¾, nailed and painted with holders, springs, and separators, used 3 seasons, in perfect condition, at 35c each; lots of 100 at 30 cts. B. F. SMITH, JR., Fromberg, Mont.

THE ROOT CANADIAN HOUSE, 185 Wright Ave., Toronto, Ont., successors to the Chas. E. Hopper Co. Full line of Root's goods; also made-in-Canada goods, Extractors and engines; GLEANINGS and other bee-journals; Prairie State incubators. Get the best. Catalog and price list free.

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PATENTS THAT PAY: \$625,812.00 clients made. Protect your idea. Send data. Advice and two wonderful Guide Books free. Highest reference. E. E. VROOMAN & Co., 834 F., Washington, D. C.

POULTRY

POULTRY PAPER, 44-124 page periodical, up to date, tells all you want to know about care and management of poultry, for pleasure or profit; four months for 10 cents. POULTRY ADVOCATE, Dept. 56, Syracuse, N. Y.

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PROFITABLE LITTLE FARMS IN VALLEY OF VIRGINIA, 5 and 10 acre tracts, \$250 and up. Good fruit and farming country. Send for literature now. F. H. LABAUME, Agr. Agt. N. & W. Ry., 246 Arcade Bldg., Roanoke, Va.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free.

C. L. SEAGRAVES, Industrial Commissioner A. T. & S. F. Ry, 1934 R'y Exchange, Chicago.

THE SOUTH FOR FARM PROFITS. Why not look for a farm home in the South? Farm lands, for time and money invested, pay larger profits than elsewhere. Two to four crops a year, good yields; best prices for products. Good locations in healthiest, most pleasant districts, \$15 an acre up. Write for our literature and the special information you wish. M. V. RICHARDS, Ind. and Agr. Comm'r, Room 27, Southern Railway, Washington, D. C.

WANTS AND EXCHANGES

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1916. Our catalog and price list will be mailed to you free. Order early and get the discounts.

C. E. SHRIVER, Boise, Idaho.

WANTED.—Back numbers of GLEANINGS. We will give two months' credit on subscription for each number of GLEANINGS sent us (in good condition) of dates of March 1, July 1, and August 1, 1916, up to a total of 25 of each number. Here is a chance to get six months' subscription at little cost. Send them along. THE A. I. ROOT COMPANY, Medina, O.

BEEES AND QUEENS

Finest Italian queens. Send for booklet and price list. JAY SMITH, 1159 De Wolf St., Vincennes, Ind.

FOR SALE.—Italian hybrids at 20 cts. each.
C. G. FENN, Washington, Ct.

Italian queen-bees, \$1.00 each; tested, \$1.50.
J. B. CASE, Port Orange, Fla.

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 84 Cortlandt St., New York.

FOR SALE.—Italian queens; untested, 50 cts. each.
E. A. SIMMONS, Greenville, Ala.

Fine three-banded Italian queens. Circular and price list free.
J. L. LEATH, Corinth, Miss.

All or part of 800 to 1400 colonies of bees for sale. Ask for terms. W. P. COLLINS, Boulder, Col.

FOR SALE.—300 to 500 colonies in A No. 1 condition in famous Hagerman Valley, where failure is unknown. Address J. E. HANKS, Hagerman, Ida.

Italian queens bred for their honey-gathering qualities. One, \$1.00; six, \$5.00.

EDITH M. PHELPS, Binghamton, N. Y., East End.

H. C. Short, queen-breeder, formerly of Winchester, O., is now with W. D. Achord, Fitzpatrick, Ala. We will appreciate the patronage of Mr. Short's customers.

CLOSING-OUT PRICE.—Some fine young golden queens that produce golden bees. Good honey-gatherers, tested, 75 cts.; 3, \$2.00; untested, 50 cts.; 3, \$1.25. D. T. GASTER, Rt. 2, Randleman, N. C.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1.; 6 for \$5. WM. S. BARNETT, Barnetts, Va.

Leather-colored "Nutmeg strain" queens, \$1.00; \$10.00 per dozen. Tested, \$1.50. Special price on large lots by return mail.

A. W. YATES, 3 Chapman St., Hartford, Ct.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. \$1.00 each.

HENRY S. BOHON, Rt. 3, box 212, Roanoke, Va.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, \$1.00; 6, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. BROCKWELL, Barnetts, Va.

GRAY CAUCASIANS.—Early breeders, great honey-gatherers; cap beautifully white; great comb-builders; very prolific; gentle; hardy; good winterers. Untested, \$1; select untested, \$1.25; tested, \$1.50; select tested, \$2.00. H. W. FULMER, Andalusia, Pa.

FOR SALE.—Italian bees, 1 lb. with queen, \$2.25; one-frame with queen, \$2.00. Queens, 75 cts. each. Safe delivery guaranteed; 30-page catalog with beginner's outfit for stamp. THE DERBY TAYLOR CO., Newark, N. Y. (formerly Lyons).

My bright Italian queens will be ready to ship April 1, at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound, and nucleus. Safe arrival and satisfaction guaranteed.

M. BATES, Rt. 4, Greenville, Ala.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; 6, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. PHELPS & SONS, Wilcox St., Binghamton, N. Y.

Queens for requeening. Best on market. One untested, \$1.50; 12, \$12.00; one tested, \$2.00; 12, \$18.00; one select tested, \$3.00; 12, \$24.00. Special low price on 50 or more. Write. Safe delivery and satisfaction guaranteed. THE J. E. MARCHANT BEE & HONEY CO., Canton, Ohio.

QUEENS.—Improved three-banded Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, \$8.00; select, \$1.00; dozen, \$10.00; tested queens, \$1.25 each; dozen, \$12.00. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Rt. 3, Williamstown, Ky.

HOLLOPETER'S honey-gathering strain of Italians are now at their best. This strain has a record of 100 lbs. more honey per colony than the average colony. Safe arrival by return mail. Untested queens, each, 75 cts.; 10 for \$6.00, 20 for \$10.00. Tested queen, each, \$1.00. 1 lb. bees with queen, \$2.00. We are booking orders now for spring delivery.

J. B. HOLLOPETER, Pentz, Pa.

FOR SALE.—Three-banded Italian queens and bees from the best honey-gathering strains obtainable. Untested queen, 75 cts.; 6, \$4.25; 12, \$8.00; tested queens, \$1.25; 6, \$7.00; 12, \$12.00. For select queens, add 25 cts. each to the above prices. For queens in quantity lots, or bees by the pound, write for prices. ROBT. B. SPICER, Rt. 181, Wharton, N.J.

TENNESSEE-BRED QUEENS! My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly of money returned by first mail. 1000 nuclei in use. Tested, in June, \$1.75; untested, \$1.00; in July, \$1.50 and 75 cts. Postal brings circular.

JOHN M. DAVIS, Spring Hill, Tenn.

PURE ITALIAN QUEENS.—Golden or three-banded by return mail. All queens are warranted purely mated. They are large and long-lived. They have proven themselves highly disease-resistant in many localities. One select untested, \$1.00; 6, \$4.25; 12, \$8.00; 100, \$60.00. Tested, \$1.25. Bees by the pound, nuclei, colonies. Safe arrival and satisfaction I guarantee. Circular free.

J. E. WING, 155 Schiele Ave., San Jose, Cal.

One hundred colonies of the yellow strain Italian that are free from disease and heavy in stores on Hoffman frames in ten-frame hives that are in good condition. Price is \$200 for the lot. Also twenty new hives painted and ready for use with wired Hoffman frames; are the regular Dovetailed hives that were never in use, at \$2.00 each, or bees and hives for \$235. Must be sold by Oct. 15.

W. S. WILLIAMS, Julian, Pa.

FOR SALE.—65 colonies Italian bees, \$4.00 per colony; 10 colonies hybrids, \$3.50 per colony. All from J. P. Moore's strain. All in 8-frame hive bodies in winter-cases, standard full-depth self-spacing Hoffman frames, 8 to each hive. All combs straight; colonies strong and healthy with stores for winter. Would bunch the lot for \$3.25 per colony. A few untested Italian queens, 60 cts. each.

WILMER CLARKE, Earlville, Madison Co., N. Y.

Convention Notice

MICHIGAN BEEKEEPERS EAT THANKSGIVING DINNER IN LANSING.

On November 30, December 1 and 2, Michigan beekeepers will gather at Lansing for the fifty-first meeting of the State Association. The opening day coming on Thanksgiving will enable beemen to renew acquaintance one with the other over the festive board, and will be an auspicious day on which to unite and discuss the summer's work, and to make plans for a more successful season in 1917. The holiday will also enable beekeepers to bring their wives along, so that we expect this meeting to be largely a family affair. Many ladies have already intimated that they would be present to help swell the attendance and enjoy a good time.

We are preparing an interesting and profitable program, which will be published in the November issue, and we can assure all those planning to attend that we are going to have the best meeting that the Michigan Beekeepers' Association has ever had.

There are many beekeepers who do not yet fully realize the value of these conventions. A beekeepers' convention is an investment for the beekeeper, and it remains with him to secure as many shares as possible, because every share should, and in many cases does, return a fine profit the next season.

Many of our most successful beekeepers will be in attendance—beemen who count their crops in tons rather than in pounds; and a few minutes' conversation with these men will be worth all the expense and trouble of coming to the meeting. If you are looking forward to making beekeeping a profitable part of your work in the future, by all means take in these meetings in Lansing.

We do not want the beekeepers to forget the exhibit side of the convention. We shall have plenty of room to display honey and other exhibits; and as we are planning to give diplomas and medals to be won outright, besides the challenge medals, we are expecting a nice showing of honey that will add to the general interest of the convention.

We hope to include other features which will tend to enliven the proceedings; and with the banquet which Messrs. Root and Hunt are providing all beekeepers present, we should easily have a convention that will rank among the largest and most enjoyable ever staged by a state association. We will do our part, and hope and expect you to join with us in making this coming meeting a hummer, and eat your Thanksgiving dinner in Lansing.

East Lansing. F. ERIC MILLEN, Sec.

Be Efficient in BEE CULTURE

Grasp the experience of others in beekeeping by reading the best that has been published. The pamphlets and books listed below compel interest. Place a X in the margin opposite the publication wanted.

- ☐ **THE DEVELOPMENT OF THE APPLE FROM THE FLOWER.** By O. M. Osborne. Here's the latest scientific information about why apple blossoms can not do without bees. Free.
- ☐ **MY FIRST SEASON'S EXPERIENCE WITH THE HONEYBEE.** By "The Spectator," of the *Outlook*. A leaflet humorously detailing the satisfaction of beekeeping. Free.
- ☐ **CATALOG OF BEEKEEPERS' SUPPLIES.** Our new complete catalog, mailed free to any address on request.
- ☐ **THE BEEKEEPER AND FRUIT-GROWER.** Do you know that bees are necessary in modern fruit culture? This 15-page booklet tells how beekeeping is doubly profitable to the fruit-grower. Free.
- ☐ **SPRING MANAGEMENT OF BEES.** The experience of some successful beekeepers on solving this perplexing problem. Price 10 cents.
- ☐ **THE USE OF HONEY IN COOKING.** Just the thing for the up-to-date housewife. Price 10 cents.
- ☐ **BEES AND POULTRY,** how they work together profitably for others—why not for you? Some valuable pointers on hens and honeybees. Free.
- ☐ **HOW TO KEEP BEES.** A book of 228 pages detailing in a most interesting manner the experiences of a beginner in such a way as to help other beginners. Price \$1.00 postpaid.
- ☐ **THE A B C OF BEE CULTURE.** A standard encyclopedia on bees. The largest and most complete published anywhere. 712 pages, fully illustrated. \$2.00 postpaid.
- ☐ **WINTERING BEES.** A digest of all the information on the subject. Thoroughly modern and practical. Price 10 cents.
- ☐ **THE BUCKEYE HIVE,** or the management of bees in double-walled hives. Will interest the amateur especially. Illustrated. Price 10 cents.
- ☐ **SWEET CLOVER,** the all-around forage crop. Just off the press. Investigate this astonishing plant. Free.
- ☐ **ADVANCED BEE CULTURE.** A summary of the best ideas of experts in apiculture. The book is beautifully printed and bound. 205 pages. Cloth. \$1.00 postpaid.

Be sure that the following coupon is carefully filled out.

The A. I. Root Company, Medina, Ohio.

Please send me the items checked above.

I enclose \$..... to cover the cost.

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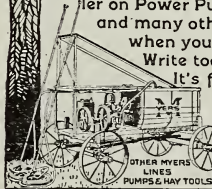
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SPRAYING PAINTING OR DISINFECTING To the man experienced in fruit growing Fall Spraying means

healthy trees that will require but little more care the following spring. Fall is the season to successfully fight scale and similar trees diseases by spraying, and you want the best equipment obtainable for this work. MYERS will fill the bill, and whether your orchards are extensive or include but a few trees there is a MYERS OUTFIT that will just fit your needs. Myers Spray Pumps are also adapted for painting, disinfecting and similar work.

The Myers Line includes Bucket, Barrel and Power Pumps and Complete Outfits with such improvements as our patented easy operating Cog Gear Head on Hand Pumps and Automatic Pressure Controller on Power Pumps—You get these

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To see birds, hear their music, and taste honey are a happy trio.

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Mfrs. Kalamazoo, Mich.

A Kalamazoo
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HONEY-JARS

No. 25 one-pound screw-cap, \$4.75 a gross. Discount on quantity. Light honey, clover flavor, two 60-lb. cans, 9 cts. per lb. Sage honey, 9 3/4 cts. Catalog of apianian supplies and bees free.

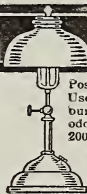
I. J. STRINGHAM, 105 PARK PLACE, N. Y.
Apiaries: Glen Cove, L. I.

Whys and Wherefores of Fall Spraying

is the title of a little booklet, giving seven reasons, official and non-official, why it is the best time to spray. This booklet will besent out by the B. G. Pratt Co., 50 Church St., New York, manufacturers of the well-known "SCALECIDE" at a very early date. If you are not on their mailing list, send them a postal today giving the number of your trees and your dealer's name and you will receive a copy free. Address Dept. 6.

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Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clear and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.
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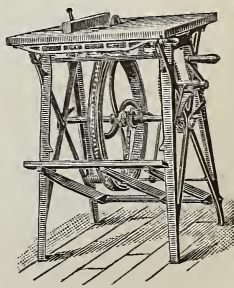
BARNES' Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices. Address

W. F. & JOHN BARNES CO.
545 Ruby St.
ROCKFORD, ILLINOIS



TRADE NOTES

SECOND-HAND 60 LB. CANS.

Our supply of second-hand cans at New York has been disposed of; but we still have a good supply both at Medina and Philadelphia of choice cans suitable for use again in shipping honey. These we are selling at \$4.00 for 10 cases; \$8.50 for 25 cases; \$80.00 for 100 cases.

CHIPPED TUMBLERS CHEAP.

We again have a supply of two or three hundred cases of 2 dozen each of tin-top tumblers holding 6½ oz. of honey, or ¼ lb. of jelly. They have the edges slightly chipped so they cannot be sealed airtight for shipping, but will serve as a cheap container for some uses. We offer them, while they last, at \$2.00 for ten cases of 2 dozen each, including the tin tops.

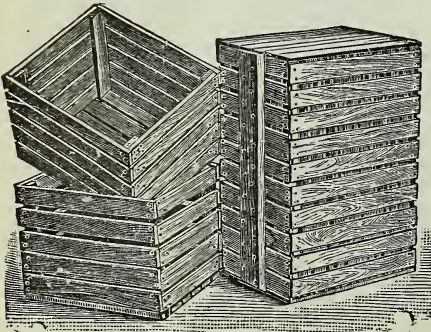
MASON FRUIT-JARS.

We have a surplus stock of choice Atlas Mason fruit-jars which we offer, to reduce stock, at the following prices which are good only while this stock lasts, and for shipment from Medina, Ohio, only. Pint Mason jars, 45 cts. per doz.; \$5.25 per gross. Quart Mason jars, 48 cts. per doz.; \$5.50 per gross. Two-quart Mason jars, 75c per doz.; \$8.50 per gross.

These are packed in paper cartons of one dozen each. Pint size would stand reshipping short distances filled with honey, altho we would not recommend it.

BUSHEL BOXES.

We have on hand, ready for immediate shipment, a good stock of these boxes, packed as shown in cut. They are made with oak corner posts and bottom end slats to receive the nails, the remainder of the box being basswood. They are very convenient, and popular for handling potatoes, apples, onions, and other farm crops. They hold a heaped bushel level full, so they can be stacked any height desired. To reduce stock we offer them for a short time at the following special prices:



All-slatted bushel boxes, per crate of 14, \$2.25.

Slatted bushel boxes, per crate of 12, \$2.10.

Galvanized bound boxes, per crate of 12, \$2.75.

In lots of 10 crates or more, 5 per cent discount.

The all-slatted is the cheapest, and the most popular style. Two are nailed in each package, and sufficient nails are included for the remainder.

FURTHER CHANGES IN PRICE.

Advancing costs have made necessary some further changes in price of several articles listed in our catalog.

Enamel cloth is raised 5 cts. per yard to 35 cts. or \$3.60 per piece.

Metal frame-spaces are raised 5 cts. per 100 to 40 cts. or \$3.50 per 1000.

Tin rabbits are raised 5 cts. per 100 to \$1.25; also T tins the same.

Glass for shipping-cases is advanced to \$2.00 per 100 for 2 x 16, or \$3.60 per box of 220 pieces.

Novice honey-knives are advanced 10 cts. each to 90 cts.

Section boxes in quantities above 1000 are marked up 15 cents per 1000, no change being made in the small-quantity rate except that B grade plain are advanced to a difference of 50 cts. below A grade instead of 75 cts., the rate in effect the past year.

REVISED PRICES ON COMB FOUNDATION.

Because the cost of paper has more than doubled, and labor has advanced, we have found it necessary to revise prices on comb foundation and rates for working wax into foundation. The new scale of prices on foundation packed in assorted paper boxes of 1 to 5 lbs. is 2 cts. per pound higher than those which have been in effect the past year, and, effective Oct. 1, are as follows:

	Price per pound in lots of				
	1 lb.	5 lb.	10 lb.	25 lb.	50 lb.
Medium brood . . . .	.62	.60	.58	.56	.55
Light brood . . . . .	.64	.62	.60	.58	.57
Thin super . . . . .	.70	.67	.65	.63	.62
Extra thin super . . .	.75	.70	.68	.66	.65

Packed in 25-lb. wood boxes, 1 ct. per lb. less.

Packed in all 5-lb. paper boxes, ½ ct. per lb. less.

Packed all in 2-lb. paper boxes, 1 ct. per lb. more.

Packed all in 1-lb. paper boxes, 2 cts. per lb. more.

Wholesale and jobbing prices are marked up on the same basis.

Rates for making wax into foundation are advanced 2 cts. per lb. in 25 and 50 pound lots, and 1 ct. in larger lots, with a like advance for paper packing.

THE A. I. ROOT CO., Medina, O.

Special Notices by A. I. Root

THE LADY EGLANTINE CHICKENS.

On page 879 of our last issue I told you of a pullet that laid her first egg when 4 months and 8 days old, and that she was at that date laying an egg every day. I am glad to tell you she has continued to lay an egg every day up till today, Sept. 26—that is, so far as I can tell without trapezing. As her comb is so different from any of the others I almost invariably find her on the nest some time in the forenoon. Furthermore, I put her in a cage and took her over to our county fair where she stayed two days and laid an egg each day on the fair-ground, and one the day after she got home. (About a week ago a sitting hen came off with eight chicks from the little pullet's eggs; and they are as lively as crickets at this date.) Not only has this one pullet shown herself to be such a persistent layer at so early an age, but we are getting five or six little eggs (they are steadily getting bigger) from the seven pullets every day; and yesterday we got six. All of them laid an egg but one. Now, already we are having applications for eggs; but, bless your heart, my good friends, it would not do for the writer of the Home papers to go to selling eggs unless he sells them to the grocer at grocery prices. If you want some of the Lady Eglantine stock write to the Lady Eglantine Farms, Greensboro, Md. The little book they send out will be valuable, even if you do not make a purchase.

"CONVERSATIONS WITH CHRIST," ETC.

The little tract containing the title above, given on page 747, Aug. 15, can be had free of charge by addressing L. B. Worcester, Tabor, Iowa. In ordering you had better send a stamp or stamps to pay postage.

The Hephzibah Faith Missionary Association, Tabor, Iowa, also publishes a beautiful little Christian and temperance paper twice a month, called *Good Tidings*, at only 50 cents a year, now in its sixteenth year; also a very pretty and wholesome weekly for young people, entitled *John Three Sixteen*, at only 30 cents a year. Both periodicals are specially designed for mission Sunday-schools, and large numbers are used by Christian workers for free distribution at railroad stations, jails, etc. Samples free. Address Faith Missionary Association, Tabor, Iowa.